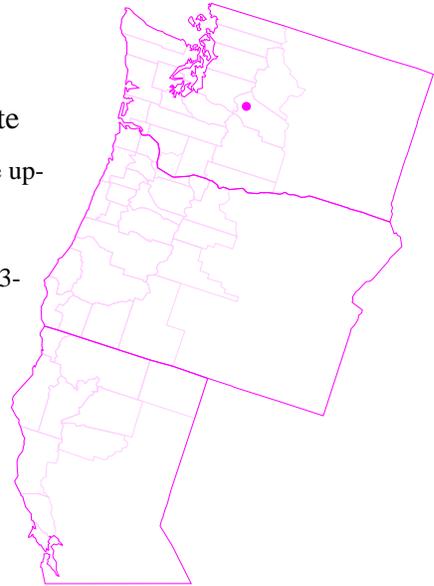


***Acanthophysium farlowii*** (Burt) Ginns & Lefebvre**ROD Name** *Aleurodiscus farlowii***Family** Aleurodiscaceae      **Morphological Habit** resupinate

**Description:** **SPOROCARPS** discrete to confluent, discoid, with determinate up-raised margins, 0.5-1.5 mm diameter. **HYMENIAL SURFACE** granular to subcoriaceous, pale yellow-brown drying pale tan. **ABHYMENIAL SURFACE** glabrous, dark-colored. **ACANTHOPHYSES** variable, cylindrical to subclavate, mostly swollen below, with aculeate thick-walled prongs covering the top 1/3-2/3 of the apex above narrow to inflated thin-walled base. **GLOEOCYSTIDIA** inconspicuous, flexuous, cylindric, not apically moniliform. **BASIDIA** subclavate to clavate, 75-90 x 14-20  $\mu\text{m}$ . **SPORES** ovate to ellipsoid, (15-) 16-18 (-19) x (11-) 12-14 (-15)  $\mu\text{m}$ , apiculate, slightly flattened adaxially, thin-walled, smooth, amyloid.



**Distinguishing Features:** Characterized by the pale yellow-brown, disc-shaped sporocarps with dark brown underside growing on twigs and the wide acanthophyses. *Acanthophysium abietis* (Jackson & Lemke) Ginns & Lefebvre grows primarily on *Abies* spp., has a resupinate, pale orange-tan sporocarp with indeterminate radiate margins, narrower acanthophyses, subcylindric-ampulliform gloeocystidia, larger ovoid spores (18-20 x 16-18  $\mu\text{m}$ ), and larger basidia (to 24  $\mu\text{m}$  wide). *Acanthophysium piceinus* (Lyon & Lemke) Ginns & Lefebvre grows on *Picea rubens*, has a brown to tan sporocarp with determinate margins and subclavate-ampulliform gloeocystidia with slightly larger ovoid to ovoid-ellipsoid spores (17-20 x 13-15  $\mu\text{m}$ ).

**Distribution:** Also occurs in several Canadian Provinces, and the northeastern United States. Known from a single site within the range of the northern spotted owl: **WASHINGTON, Kittitas Co.**, Wenatchee National Forest, Lake Kachess picnic area.

**Season:** Fruits in May.

**Substrate and habitat:** Saprophyte, or possibly parasitic or endophytic, fruiting on recently dead twigs of live *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga* spp.

**References:** LEMKE, P.A. 1964. The genus *Aleurodiscus* (*sensu stricto*) in North America. Can. J. Bot. 42:213-246.

**NOTES:**

Photo courtesy of Thom O'Dell

*Albatrellus avellaneus* PouzarROD name *Albatrellus avellaneus*

Family Scutigeraceae      Morphological Habit polypore

**Description:** CAP 40-100 mm broad, circular to flabelliform, roughened, pale purple brown, becoming pale orange to tan with dark squamules in age. PORE SURFACE initially white, staining yellow, drying pale brown. PORES angular, 2-3 mm in diameter. STEM 60-180 x 10-15 mm, central, white. CONTEXT AND TUBE LAYER white, staining yellow when cut, drying brown. HYPHAL STRUCTURE monomitic. CLAMP CONNECTIONS absent. SPORES ovoid to broadly elliptical, 4.8-6 x 3.4-4.5  $\mu$ m, thin-walled, smooth, hyaline, inamyloid.

**Distinguishing Features:** Characterized by a fleshy annual polypore with a squamulose, pale purple-brown to pale orange cap, white pore surface, and a white-spore print. *Albatrellus ovinus* (Schaeff.:Fr.) Murrill has a cream to buff cap which does not mature to pale orange to tan and it has smaller spores (4-5 x 3-3.5  $\mu$ m).

**Distribution:** Endemic to California, Oregon and Washington. Known from three sites within the range of the northern spotted owl: OREGON, Coos Co., Shore Acres State Park; WASHINGTON, Grays Harbor Co., Olympic National Forest, Quinalt Research Natural Area; San Juan Co., Friday Harbor Biological Station. Other potential sites with vague locality data extend the range to Humboldt Co., California.

**Substrate and habitat:** This is a terrestrial polypore and is a presumed mycorrhiza former with Pinaceae spp.

**Season:** Fruits from October through January.

**References:** GILBERTSON, R.L., AND L. RYVARDEN. 1986. North American Polypores. Vol. 1. Fungi Flora, Oslo. SMITH A.H., H.V. SMITH, AND N.S. WEBER. 1981. How to Know the Non-Gilled Mushrooms. Wm. C. Brown County, Dubuque.

## NOTES:

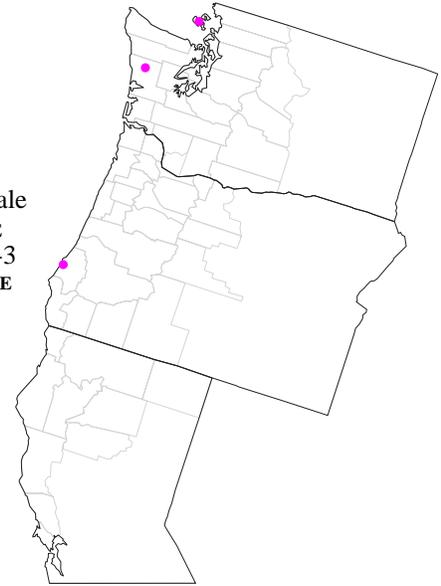


Photo courtesy of Dr. J. Ammirati

## *Albatrellus caeruleoporus* (Peck) Pouzar

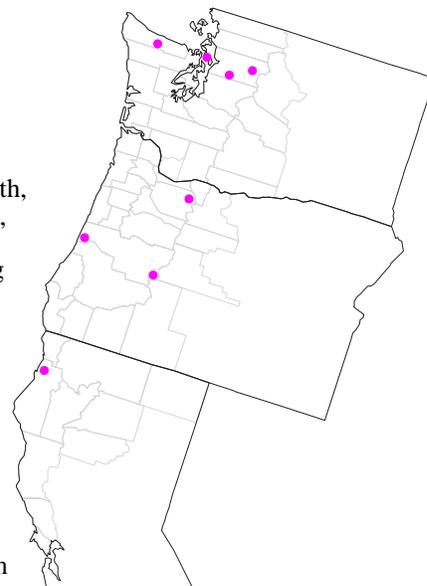
**ROD name** *Albatrellus caeruleoporus*

**Family** Scutigeraceae      **Morphological Habit** polypore

**Description:** CAP to 6 cm broad, more or less circular, more or less smooth, gray to indigo blue maturing to pale gray brown. **PORE SURFACE** gray to blue, drying brown to bright red-orange. **PORES** angular, (1-) 2-3 (-5) mm. **STEM** central, sometimes multiple, blue. **FLESH** cream to pale tan, tube layer losing blue coloration, becoming red-brown when dried. **HYPHAL STRUCTURE** monomitic. **CLAMP CONNECTIONS** absent. **SPORES** ovoid to subglobose, 4-6 x 3-5  $\mu\text{m}$ , smooth, hyaline, inamyloid.

**Distinguishing Features:** Characterized by a fleshy annual polypore, gray-blue pore surface with a circular cap and white spore print. *Albatrellus flettii* is larger, and has a white pore surface (salmon colored at maturity), clamp connections, and smaller spores (3.5-4 x 2.5-3  $\mu\text{m}$ ).

**Distribution:** Also occurs in the northeastern United States. Known from eight sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Redwood National Park, Prairie Creek, Rhododendron trail; **OREGON**, Clackamas Co., Wemme; Lane Co., Honeyman State Park; Willamette National Forest, near O'Dell Lake; **WASHINGTON**, Clallam Co., Olympic National Park, Lake Mills trail; **Island Co.**, Whidbey Island; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Barlow Pass; Lake Hannan.



**Substrate and habitat:** This is a terrestrial polypore and is a presumed mycorrhiza former with *Tsuga* spp.

**Season:** Fruits from September through November.

**References:** GILBERTSON, R.L., AND L. RYVARDEN. 1986. North American Polypores. Vol. 1. Fungi Flora, Oslo. SMITH A.H., H.V. SMITH, AND N.S. WEBER. 1981 How to Know the Non-Gilled Mushrooms. Wm. C. Brown County, Dubuque.

**NOTES:**



Photo courtesy of D. Arora

Photo available only in print version

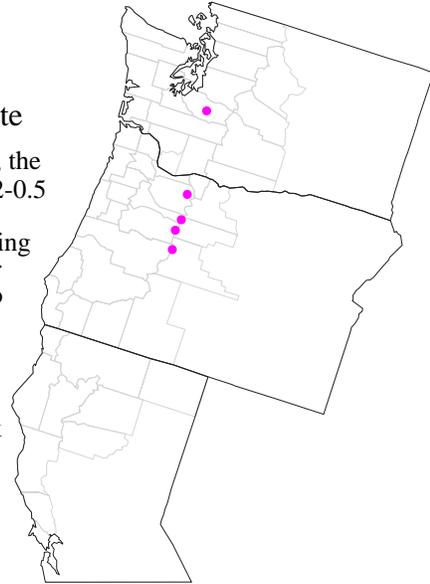
Photo courtesy of University of Michigan

*Alpova alexsmithii* TrappeROD name *Alpova alexsmithii*

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 4-40 mm broad, smaller specimens subglobose, the larger flattened to elongate or irregular with lobes and furrows. **PERIDIUM** 0.2-0.5 mm thick, yellow-brown to dark brown, sometimes staining darker where bruised, felty to more or less scabrous and occasionally rimose-rugulose, drying dark olive to nearly black; large, concolorous rhizomorphs appressed on lower side, originating from a basal tuft of hyphae and rhizomorphs. **GLEBA** firm to crisp, sticky gelatinous, in wet weather exuding sticky fluid from the locules. **LOCULES** rounded, gel-filled, 0.3-0.6 mm in diam, separated by white veins, the contents in youth pallid, at maturity gray-yellow-pink, when dried pale yellow-brown. **ODOR** faint, pleasant. **KOH** on fresh and dried peridial surface, instantly dark brown, soon black;  $\text{FeSO}_4$ , dark brown and soon black on fresh specimens, quickly olive on dried specimens. **PERIDIAL EPICUTIS** erratic in thickness, of tangled hyphae 2-4  $\mu\text{m}$  in diam with pale yellow-brown walls, occasional versiform end cells 4-8  $\mu\text{m}$  in diam present, no pigment diffusing in KOH mounts. **PERIDIAL SUBCUTIS** 174-470  $\mu\text{m}$  thick, near the epicutis often arranged in an erratic, obscurely radiate palisade (observable only in perfect, thin sections) of hyphae 8-20  $\mu\text{m}$  in diam with brown walls 2-4  $\mu\text{m}$  thick, this layer underlain by interwoven, hyaline, thinner-walled hyphae 4-10  $\mu\text{m}$  at septa with most cells inflated to 8-30  $\mu\text{m}$ . **TRAMA** of interwoven, hyaline, thin-walled hyphae 3-6  $\mu\text{m}$  in diam with cells frequently inflated up to 12 (-30)  $\mu\text{m}$ , near the locules the hyphae highly gelatinized; locules lined with a palisade of subclavate to irregularly constricted, hyaline, thin-walled brachybasidiole cells or basidia but most extending as interwoven thin-walled, hyaline hyphae that fill the locules. **BASIDIA** borne among gelatinizing hyphae filling the locules, clavate, 21-29 x 4-5  $\mu\text{m}$ , hyaline, thin-walled, readily collapsing and by maturity autolysed. **CLAMP CONNECTIONS** absent or rare. **SPORES** ellipsoid or a few subpyriform to obovoid, 5-7 (-8) x 3-4 (-5)  $\mu\text{m}$ , smooth, thin-walled, in KOH hyaline singly, gray-yellow in mass, in Melzer's reagent pale yellow singly, orange-yellow in mass, strongly cyanophilic in youth, acyanophilic at maturity.



**Distinguishing Features:** Characterized by the combination of a sticky gelatinous gleba with gel-filled locules, yellow-brown to dark brown peridium without pigments that dissolve in KOH, and thin-walled, short hyaline spores. Microscopic examination is necessary for definitive placement but the macroscopic characters, particularly when cut in half, alert the collector to study it further.

**Distribution:** Also known from British Columbia, Canada. Known from five sites within the range of the northern spotted owl: **OREGON, Clackamas Co.**, Mount Hood National Forest, Still Creek forest camp; **Jefferson Co.**, Mount Jefferson Wilderness Area, below Carl Lake; **Lane Co.**, Willamette National Forest, Willamette Pass; **Marion Co.**, south shore of Breitenbush Lake, east of Lakeside camp shelter; **WASHINGTON, Pierce Co.**, Mount Rainier National Park, Meadow Creek. Not known from California.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Tsuga heterophylla* and *T. mertensiana* from 3,800 ft. to 5,500 ft. elevation.

**Season:** Fruits from August through December.

**References:** TRAPPE, J.M. 1975. A revision of the genus *Alpova* with notes on *Rhizopogon* and the Melanogastraceae. Nova Hedwigia Beih. 51:279-309.

**NOTES:**



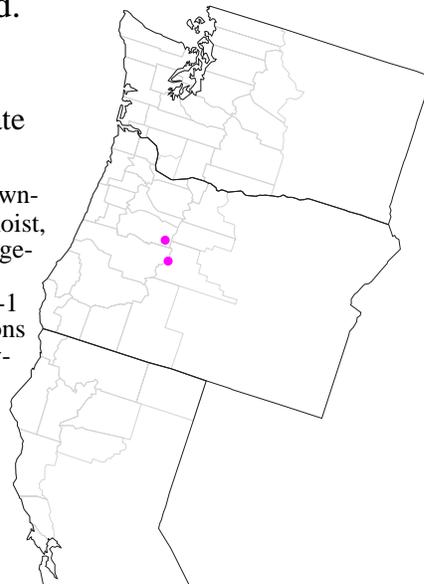
Photo courtesy of Dr. J. Trappe

*Alpova aurantiacus* Trappe, Castellano & Evans, in. ed.ROD name *Alpova* sp. nov. # Trappe 1966

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 17-19 x 20-23 mm, subglobose-lobed, pale brown-orange to orange-brown, with much adherent soil and debris. **GLEBA** firm, moist, pale pink-orange to orange-brown, the color a combination of orange to orange-brown trama and pale yellow to pale brown-yellow spore masses filling the rounded locules 0.1-0.4  $\mu\text{m}$  broad. **COLUMELLA** lacking, but sterile veins 0.2-1 mm. broad, concolorous with trama, meandering through gleba; glebal sections of mature specimens cut when fresh, then dried, with dark red-orange, glassy-resinous deposits. **ODOR** strongly oily-fruity. **PERIDIUM** 100-200 mm thick. **PERIDIAL EPICUTIS**  $\pm 25 \mu\text{m}$  thick, of appressed, hyaline, thin-walled hyphae 1.5-4  $\mu\text{m}$  in diam, the cell contents pale olive-yellow to orange. **PERIDIAL SUBCUTIS** 75-175  $\mu\text{m}$  thick, of interwoven, hyaline, thin-walled hyphae 1.5-5  $\mu\text{m}$  in diam at septa with occasional cells inflated to 5-10  $\mu\text{m}$ , in youth with scattered, extracellular deposits of amorphous orange pigment in KOH, in Melzer's reagent the pigment dissolving into yellow to orange pigment globules, at maturity with massive extracellular deposits of orange to bright red pigment in KOH, in Melzer's reagent the pigment dissolving into orange to brown pigment globules. **GLEBAL TRAMA** with a narrow, central strand of interwoven, hyaline, thin-walled hyphae 1.5-5  $\mu\text{m}$  in diam; broad zones between central strand and locule margins of hyaline, thin-walled hyphae with most cells inflated to 6-20  $\mu\text{m}$  in diam to appear nearly pseudoparenchymatous, pigment deposits throughout as in the peridial subcutis; sterile veins structured similarly to tramal central strand. **SUBHYMENIUM AND HYMENIUM** not observed. **BASIDIA** not observed. **CLAMP CONNECTIONS** not found. **SPORES** fusoid, 10-13 x (3.5-) 4-5  $\mu\text{m}$ , smooth, in KOH hyaline singly, gray-yellow in mass, thin-walled, inamyloid, cyanophilic.



**Distinguishing Features:** Characterized by the combination of a sticky gelatinous gleba with gel-filled locules, pale pink-orange to orange-brown gleba and peridium and large, inflated cells in the trama. Microscopic examination is necessary for definitive placement but the macroscopic characters, particularly when cut in half, alert the collector to study it further.

**Distribution:** Endemic to Oregon. Known from two sites within the range of the northern spotted owl: **OREGON, Deschutes Co.**, Deschutes National Forest, Devils Lake; **Linn Co.**, Willamette National Forest, head of Hackleman Creek.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Abies lasiocarpa* and *Pseudotsuga menziesii*.

**Season:** Fruits in August.

**References:** TRAPPE, J.M. 1975. A revision of the genus *Alpova* with notes on *Rhizopogon* and the Melanogastraceae. *Nova Hedwigia* Beih. 51:279-309. TRAPPE, J.M., AND CASTELLANO, M.A. 199x. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. *Mycotaxon* (in. press).

**NOTES:**

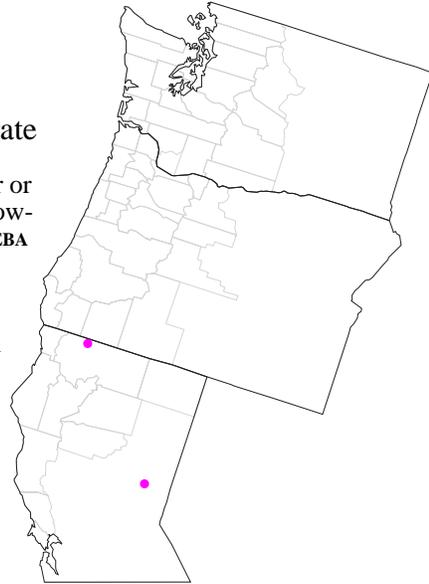
No Photograph Available

*Alpova olivaceotinctus* (Smith) TrappeROD name *Alpova olivaceotinctus*

Family Boletaceae

Morphological Habit sequestrate

**DESCRIPTION:** **SPOROCARPS** 15-25 x 20-45 mm, globose to lobed and irregular or elongated. **PERIDIUM** reviving to 0.2-0.3 mm thick, appressed-fibrillose, yellow-brown, when dried tinged olive over dull brown; rhizomorphs scattered. **GLEBA** exuding a latex when fresh, as dried the locules filled and separated by pallid veins, the locule contents yellow-brown. **KOH** on dried peridial surface instantly red-brown, soon darkening to black;  $\text{FeSO}_4$  quickly dark brown. **PERIDIAL EPICUTIS**  $\pm 25 \mu\text{m}$  thick, of appressed, interwoven hyphae 2-5  $\mu\text{m}$  in diam with scattered inflated cells, the walls yellow and thin to somewhat thickened, the contents brown-yellow and diffusing into the fluid of **KOH** mounts. **PERIDIAL SUBCUTIS** of interwoven, hyaline hyphae 2-10  $\mu\text{m}$  diam with scattered, somewhat inflated cells, the walls 0.5-1.5 (-2)  $\mu\text{m}$  in diam. **TRAMA** of interwoven, hyaline, thin-walled hyphae 2-6  $\mu\text{m}$  in diam with some slightly inflated cells, diverging to tightly interwoven, highly gelatinized cells from the tips of which grow very indistinct, thin-walled, interweaving, hyaline hyphae that fill the locules but soon autolyse, the palisade also autolysing about the time that spores begin to form. **BASIDIA** borne among tangled, gelatinized hyphae along the locule walls but not in a palisade and, less abundantly, among gelatinizing and indistinct at early stages of development. **CLAMP CONNECTIONS** absent. **SPORES** ellipsoid to oblong, a few subangular to subfusoid or irregular, (6-) 8-10 (-12) x 3-4 (-5)  $\mu\text{m}$ , the walls slightly thickened at maturity, smooth, in **KOH** pale green singly, yellow-gray in mass, in Melzer's reagent pale brown-yellow singly, yellow-brown in mass, strongly cyanophilic in youth, acyanophilic at maturity.



**Distinguishing Features:** Characterized by the combination of a sticky gelatinous gleba with gel-filled locules, yellow-brown peridium and spores which measure (6-) 8-10 (-12) x 3-4 (-5)  $\mu\text{m}$ .

**Distribution:** Endemic to California. Known from one site within the range of the northern spotted owl: **CALIFORNIA, Siskiyou Co.**, Fruit Growers Supply Co. land, west of Hilt. Three other sites are known outside the assessment area from Plumas Co. (3 collections) and Riverside Co. (1 collection), California. Two additional collections were found in unspecified locations in coastal northern California.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various *Abies* spp.

**Season:** Fruits in June, October, November and February.

**References:** TRAPPE, J.M. 1975. A revision of the genus *Alpova* with notes on *Rhizopogon* and the Melanogastraceae. *Nova Hedwigia Beih.* 51:279-309.

**NOTES:**

Photo courtesy of Dr. M.A. Castellano

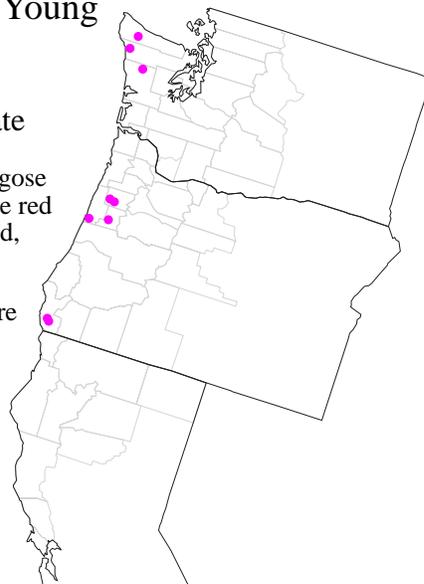
*Arcangeliella camphorata* (Singer & Smith) Pegler & Young

ROD name *Arcangeliella* sp. nov. # Trappe 12359 & 12382

Family Russulaceae

Morphological Habit sequestrate

**Description:** **SPOROCARP** 3-10 x 4-17 mm, glabrous, even to somewhat rugose or pitted, the base indented around a slight basal protrusion. **PERIDIUM** orange red to brown-orange, slowly becoming darkening to orange-brown where handled, the peridium meeting the basal protrusion or detaching to leave a gap up to 5 mm exposing underlying locules. **GLEBA** with orange yellow to orange or brownish orange trama separating locules lined with pale orange yellow, spore deposit. **COLUMELLA** ranging from percurrent and protruding beyond the base, 1-2 mm broad, to absent and represented as a small basal pad, concolorous with the peridium. **LOCULES** tending to be sublammellate-radiating near the base, towards the peridium smaller and rounded. **LATEX** white to watery white, unchanging. **ODOR** when fresh ranging from slight to pronounced, on dried specimens strongly sweet (of maple syrup). **TASTE** mild. **PERIDIAL EPICUTIS** a compact trichodermium of variously shaped, thin-walled hyphal elements, often with yellow walls, but this soon collapsing to form a more or less amorphous yellow layer over the subcutis of interwoven, hyaline, thin-walled hyphae with scattered greatly inflated cells. **TRAMA** of loosely interwoven, hyaline, thin-walled hyphae (4-) 8-12  $\mu$ m in diam. **SUBHYMENIUM** of interwoven hyphae similar to mediostratum but also with isodiametric inflated cells. **BASIDIA** 28-36 x 8-9  $\mu$ m, with 1-4 sterigmata up to 9-12  $\mu$ m long. **CYSTIDIA** not seen. **SPORES** globose to subglobose, 7-10.5 x 7-10  $\mu$ m excluding the ornamentation of amyloid lines that in youth have many short side-branches and often form a partial reticulum  $\leq$  0.5  $\mu$ m tall, at maturity more strongly amyloid and commonly forming a partial to complete reticulum 0.5-1  $\mu$ m tall, occasional minute, solitary, amyloid warts in spaces between lines, sterigmatal attachment inconspicuous  $\pm$  2 x 1  $\mu$ m, oblique to axial.



**Distinguishing Features:** Characterized by small, globose to subglobose spores that at maturity have a strongly amyloid partial to complete reticulum. These in combination with the various tones of orange in the peridium and gleba and the strong, maple-syrup odor of dried specimens set it apart from all other species.

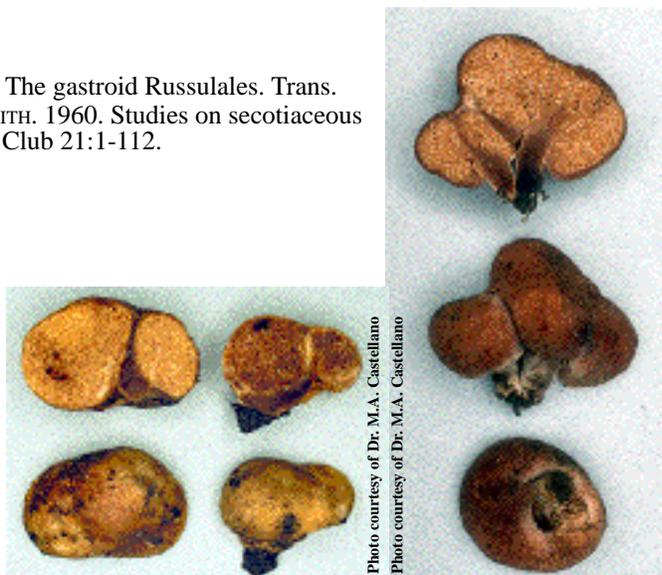
**Distribution:** Endemic to Oregon and Washington. Known from seven sites within the range of the northern spotted owl: **OREGON**, **Benton** Co., Green Mountain; **Curry** Co., Siskiyou National Forest, Pistol River; **Lane** Co., Siuslaw National Forest, Cummins Creek Wilderness Area, Cummins Creek trail; **Polk** Co., near Valsetz; **WASHINGTON**, **Clallam** Co., Olympic National Forest, Lost Creek; **Grays Harbor** Co., Lake Quinalt; **Jefferson** Co., Bogachiel State Park.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Pseudotsuga menziesii* and *Tsuga heterophylla* from 600 ft. to 2,800 ft. elevation.

**Season:** Fruits from March through November.

**References:** PEGLER, D.N., AND T.W.K. YOUNG. 1979. The gastroid Russulales. Trans. Brit. Mycol. Soc. 72:353-388. SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceous fungi. IX. The astrogastraceous series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**



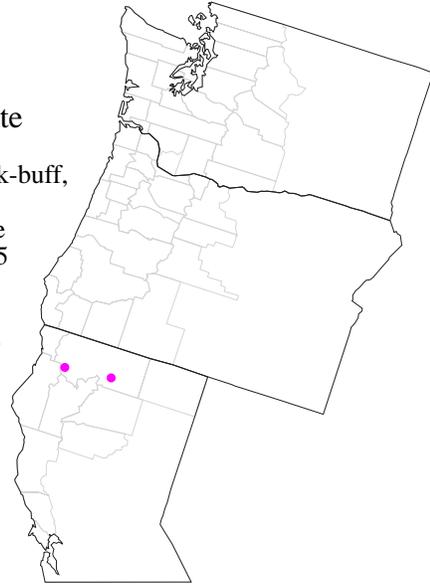
*Arcangeliella crassa* Singer & Smith

**ROD name** *Arcangeliella crassa*

**Family** Russulaceae

**Morphological Habit** sequestrate

**Description:** **SPOROCARPS** up to 3.5 cm broad, convex depressed, pale pink-buff, glabrous but unpolished. **STIPE-COLUMELLA** 5-8 mm broad, about 1 cm high, becoming hollow in largest specimen, pallid, surface unpolished. **GLEBA** pale pink-buff, varying lamellate to lacunose on same specimen. **PERIDIUM** up to 5 mm thick as dried, pale pink-buff within, margin remaining attached to the stipe or not, reaching the stipe in places thus exposing the gleba (younger specimens). **PERIDIAL EPICUTIS** of appressed filamentose hyphae 3-6  $\mu$  broad, the outermost ochraceous in KOH but the walls smooth; context of interwoven, hyaline hyphae with nests of large sphaerocysts with refractive somewhat thickened walls hyaline in KOH. **TRAMA** of interwoven, hyphae yellow to hyaline, enlarged cells (8-12  $\mu$ m) seen in groups, but these may represent cut ends of hyphae. **LATICIFEROUS HYPHAE** abundant. **CYSTIDIA** rare, pseudocystidial type, 52-65 x 7-12  $\mu$ m, flexuous, often pointed at apex. **SUBHYMENIUM** cellular, some cells enlarged. **BASIDIA** 42-53 x 10-12  $\mu$ m, pedicelate-clavate, 4-spored; sterigmata straight-conic, 4-7  $\mu$ m long. **CLAMP CONNECTIONS** absent. **SPORES** ellipsoid, 8-11 x 6.5-8  $\mu$ m (not including sterigmal attachment); sterigmal attachment oblique and prominent, with a nearly smooth but well marked plicae with an amorphous mass of amyloid material on it; ornamentation in the form of a small-meshed reticulum or broken amyloid reticulum, prominences  $\pm$  0.25  $\mu$ m high, spore wall slightly thickened and inamyloid.



**Distinguishing Features:** Characterized by a combination of sphaerocysts in the context of the peridium having thickened somewhat refractive walls, the ellipsoid, amyloid, reticulate spores, and the undifferentiated peridium.

**Distribution:** Endemic to California. Known from three sites within the range of the northern spotted owl: **CALIFORNIA, Siskiyou Co.**, Klamath National Forest, junction of Cecilville rd. and The Pacific Crest trail; Shasta-Trinity National Forest, flats just below Sand Flats; head of the south fork of the Salmon River. There are also 3 other sites on Federal land outside the assessment area in California: Stanislaus National Forest, Cow Creek; Lassen National Forest, at Mineral Ranger Station; Tahoe National Forest, San Francisco State University Field Station.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp. in mixed forests containing *Abies concolor*, *A. magnifica*, *Pinus contorta*, *P. jeffreyii* or *P. ponderosa* from 6,100 ft. to 6,500 ft. elevation.

**Season:** Fruits from June through October.

**References:** PEGLER, D.N., AND T.W.K. YOUNG. 1979. The gastroid Russulales. Trans. Brit. Mycol. Soc. 72: 353-388. SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceous fungi. IX. The astrogastraceous series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**

Photo courtesy of H. Saylor

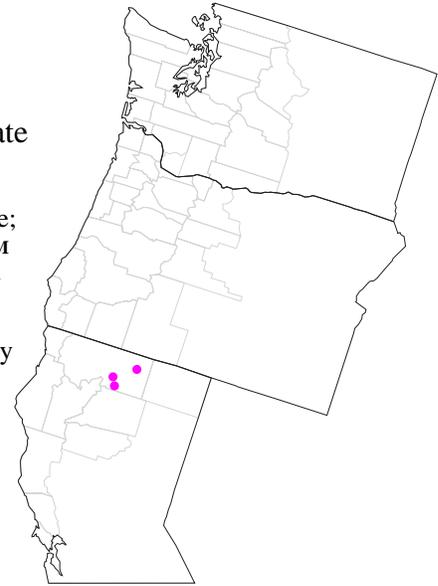
## *Arcangeliella lactarioides* Zeller

**ROD name** *Arcangeliella lactarioides*

**Family** Russulaceae

**Morphological Habit** sequestrate

**Description:** **SPOROCARPS** 2.5-3 cm broad, 1.5-2 cm high, subspherical becoming expanded, convex pileate, somewhat depressed at summit, stipitate; surface smooth, innately fibrillose, dry, pale yellow, drying brown. **PERIDIUM** thin, especially below or at margins, where it breaks away from base of stem (columella), filamentous with lactiferous hyphae. **COLUMELLA** percurrent, becoming a stipe as the cap expands, 4-6 cm broad, exuding latex when cut. **GLEBA** white, becoming creamy, drying brown, exposed below, adnexed, very ventricose, locules labyrinthiform, partially filled with white spores. **TRAMA** white in section, filled with lactiferous hyphae. **BASIDIA** clavate, four-spored, with long sterigmata bearing the spores acrogenously. **SPORES** ellipsoid, verrucose with protuberances of various sizes and somewhat connected by reticulate lines (as in *Russula* and *Lactarius*), pedicelate, 8-10.5 x 6-6.3  $\mu$ m.



**Distinguishing Features:** Characterized by the sequestrate-agaricoid sporocarp with an innately fibrillose peridium which does not stain when bruised, the presence of latex on cut tissues, and the amyloid, verrucose spores.

**Distribution:** Endemic to California. Known from four sites within the range of the northern spotted owl: **CALIFORNIA, Siskiyou Co.**, Shasta-Trinity National Forest, below timberline in Diller Canyon; Shasta-Trinity National Forest, McBride Springs campground. Another site on Mount Shasta, Bear Springs is on private land. A fourth site is outside the assessment area but on Federal land: **Plumas Co.**, Lassen National Forest, Swain Mountain Experimental Forest, stand SG4.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Abies magnifica* and *Pinus ponderosa* above 5,000 ft. elevation.

**Season:** Fruits from July through November.

**References:** PEGLER, D.N., AND T.W.K. YOUNG. 1979. The gastroid Russulales. Trans. Brit. Mycol. Soc. 72:353-388. SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceous fungi. IX. The astrogastraceous series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**



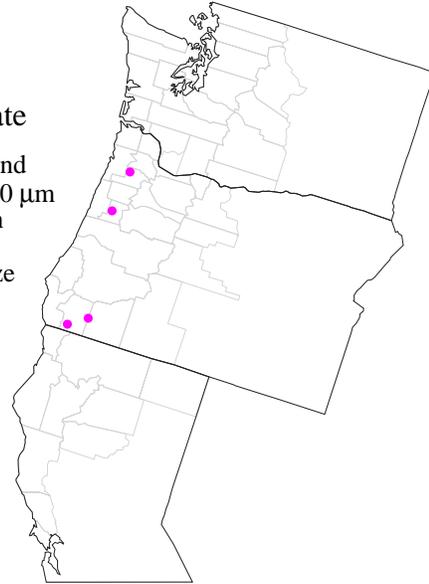
Photo courtesy of Dr. M.A. Castellano

***Balsamia nigrens* (Harkness) Gilkey**ROD name *Balsamia nigrens*

Family Helvellaceae

Morphological Habit sequestrate

**Description:** SPOCARPS black, somewhat depressed globose, coarsely and sharply verrucose. PERIDIUM up to 400 µm thick. PERIDIAL EPICUTIS up to 300 µm thick, of radial rows of subrectangular cells 8-18 x 10-40 µm with red-brown walls thickened to often completely fill the cell. Cells readily separable. PERIDIAL SUBCUTIS ±100 µm thick of cells similarly aligned and of similar size and shape but with brown-yellow walls 2-5 µm thick (change from thick-walled to thin-walled cells abrupt and at relatively uniform line). GLEBA containing the asci of densely interwoven, hyaline, thin-walled hyphae 3-4 µm diam. Inner lining of empty locules of hyphae similar but 4-6 µm diam, with hyaline walls ±0.5 µm thick, and brown in mass. ASCI saccate to ellipsoid, hyaline, tapered to a foot-like to straight base in youth, walls less than 0.5 µm thick, at maturity 30-40 x 40-60 µm, pale yellow in Melzer's reagent. SPORES oblong, 12-15 x 20-37 µm, hyaline, with 1 or more guttulates, the walls thin and ornamented with minute, barely perceptible, hyaline meandering lines around the circumference.



**Distinguishing Features:** Characterized by the black, coarsely verrucose peridium and hyaline, oblong spores.

**Distribution:** Endemic to California and Oregon. Known from four sites within the range of the northern spotted owl: OREGON, Benton Co., Woods Creek Rd.; Josephine Co., near Grants Pass, Missouri Flats; Siskiyou National Forest, Waldo Hill; Yamhill Co., near Yamhill River, Flying M ranch. In addition the original collection was from CALIFORNIA, Placer Co., near Auburn.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Pinus jeffreyi* and *Pseudotsuga menziesii* and at low to mid-elevation.

**Season:** Fruits in March, May, June and October.

**References:** GILKEY, H. 1916. A revision of the Tuberales of California. Univ. Cal. Publ. Bot.. 6:275-356. GILKEY, H. 1954. Tuberales. N. Am. Flora ser. 2, 1:1-36. HARKNESS, H.W. 1899. Californian hypogeous fungi. Proc. Calif. Acad. Sci. Third series 1(8) 241-292.

**NOTES:**

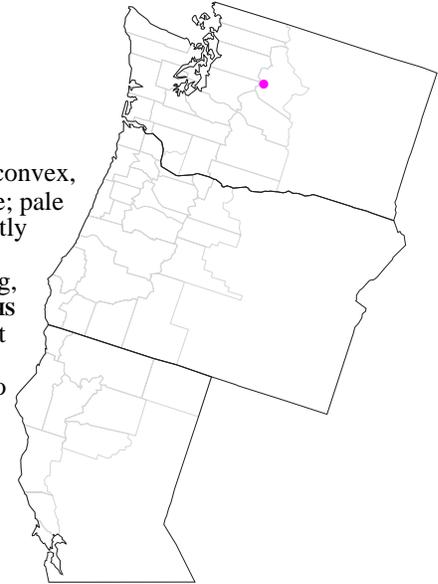
Photo courtesy of Dr. M.A. Castellano

***Boletus haematinus*** Thiers & HallingROD name *Boletus haematinus*

Family Boletaceae

Morphological Habit Bolete

**Description:** **PILEUS** 110-160 (-250) mm diam, broadly convex or plano-convex, surface dry, glabrous becoming appressed-fibrillose to rimose-areolate in age; pale brown overall when young, developing darker brown areoles in age, frequently with red tints along margin. **CONTEXT** yellow to pale yellow, blueing upon exposure. **ODOR AND TASTE** mild. **TUBES** 10-15 mm long, yellow when young, becoming green-yellow to olive in age, blueing upon exposure. **TUBE MOUTHS** bright yellow when young, but soon becoming pale red to dark red in age but nearly always remain yellow near the pileus margin, blueing where bruised. **STIPE** 50-110 x 45-70 mm, clavate, dry, upper half finely reticulate, yellow to pale yellow overall. **PILEIPELLIS** composed of tangled repent hyphae 4.5-7.5  $\mu\text{m}$  diam, hyaline to pale ochraceous in KOH, heavily encrusted. **BASIDIA** 4-spored. **CYSTIDIA** 40-45 x 7.5-9  $\mu\text{m}$ , obclavate to ventricose-rostrate, hyaline. Hymenium inamyloid. **CLAMP CONNECTIONS** absent. **SPORES** subfusoid, 12-15 x 6-7.5  $\mu\text{m}$ , inequilateral, smooth, brown to olive brown spore print.



**Distinguishing Features:** Characterized by the large, broadly convex, dry, glabrous to rimose-areolate pileus colored pale brown with darker areoles; pale yellow pileus context that stains blue upon exposure; tube mouths that are yellow when young and become red to dark red in age but nearly always remain yellow near the pileus margin; a finely reticulate, clavate, pale yellow stipe; and an inamyloid hymenium.

**Distribution:** Endemic to California and Washington. Known from a single site within the range of the northern spotted owl: **WASHINGTON**, Chelan Co., Wenatchee National Forest, Smiths Brook, 0.5 miles east of Steven's Pass. It was originally described from Yuba Pass, **Sierra Co.**, **CALIFORNIA** but this site has been severely impacted from logging and extirpation of this taxon at this site is likely. There are at least twelve other collections known from California but all of these sites are outside the assessment area.

**Substrate and habitat:** Sporocarps are scattered to gregarious, occasionally subcaespitose, in association with the roots of *Abies* spp., particularly, *A. magnifica* in the Sierra Nevada mountains, *A. lasiocarpa* in Washington and appears to be limited in distribution to subalpine forests. This habitat type is typically cool and wet.

**Season:** Fruits from August through October.

**References:** THIERS, H. D., AND R. E. HALLING. 1976. California boletes V. Two new species of *Boletus*. *Mycologia* 68:976-983.

**NOTES:**

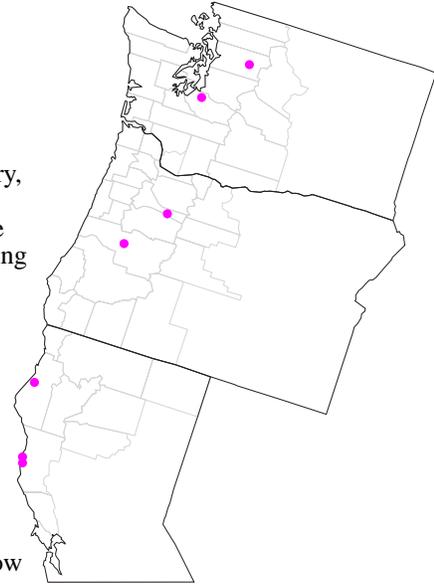
No Photograph Available

***Boletus pulcherrimus*** Thiers & HallingROD name *Boletus pulcherrimus*

Family Boletaceae

Morphological Habit Bolete

**Description:** CAP 80-200 mm diam, convex to broadly convex; surface dry, glabrous to subtomentose, when very old often becoming rimose-areolate to fibrillose-scaly; red-brown overall. CONTEXT bright yellow, changing to blue upon exposure. ODOR AND TASTE mild. TUBES 5-15 mm long, yellow, changing to blue upon exposure. TUBE MOUTHS dark red to red-brown throughout development, bluing where bruised. STEM 70-160 x 20-50 mm, clavate to clavate-bulbous (but not abruptly bulbous), dry, upper two-thirds distinctly reticulate, pale red brown overall with darker red reticulations, bluing where bruised. PILEIPELLIS composed of tangled repent hyphae with pale ochraceous, roughened walls. HYMENIUM amyloid. BASIDIA 1-4 spored. CYSTIDIA 33-60 x 8-12  $\mu\text{m}$ , subclavate to fusoid-ventricose, hyaline. SPORES subellipsoid to subfusoid, 13-16 x 5.5-6.5  $\mu\text{m}$ , smooth, brown spore print.



**Distinguishing Features:** Characterized by the combination of a large, broadly convex, dry, glabrous to subtomentose, red-brown cap, a bright yellow cap flesh that stains blue upon exposure, tube mouths that are dark red when young and remain so in age, a clavate, pale red-brown stem with dark red pronounced reticulations and a distinctly amyloid hymenium.

**Distribution:** Endemic to the Pacific Northwest. Known from forty-five collections, eight from Washington (three sites), three from Oregon (two sites), and thirty-four from northern California (five sites). Thirty-five collections were from only three sites; CALIFORNIA, Humboldt Co., Freshwater State Forest; Mendocino Co., Jackson State Forest; OREGON, Lane Co., Spencer Butte; Lane Co., Willamette National Forest, Santiam River; WASHINGTON, Pierce Co., Mount Rainier National Park, lower Tahoma Creek. In Washington, *Boletus pulcherrimus* is also known from one site on the Mount Baker-Snoqualmie National Forest in Snohomish Co. *Boletus pulcherrimus* has been collected numerous times near the type locality.

**Substrate and habitat:** Sporocarps are usually solitary, never in groups, in humus in association with the roots of mixed conifers (*Abies grandis*, *Pseudotsuga menziesii*) and hardwoods (*Lithocarpus densiflorus*) in coastal forests.

**Season:** Fruits from July through December.

**References:** SMITH, A. H., AND H. D. THIERS. 1971. The Boletes of Michigan. University of Michigan Press, Ann Arbor. 428 pp. THIERS, H. D. 1975. California Mushrooms: a Field Guide to the Boletes. Hafner Press, London. 261 pp.

**NOTES:**

Photo available only in print version

Photo courtesy of Dr. M. Beug

Photo courtesy of E. Butler



*Bondarzewia mesenterica* (Schaeff.) KreiselROD name *Bondarzewia montana*

Family Bondarzewiaceae

Morphological Habit polypore

**Description:** CAP up to 25 cm broad, typically single to few from one stem, flabelliform, scurfy to finely tomentose, yellow-orange to orange-brown or pale purple-brown. PORE SURFACE white, pores angular, becoming lacerate at the edges, 1-3 mm in diam. STEM up to 12 cm long and 11 cm wide. CONTEXT cream colored, firm. ODOR pleasant, nut-like. TASTE mild, occasionally acrid. SPORES subglobose, 6-8 x 5-7  $\mu\text{m}$ , amyloid, ridged.

**Distinguishing Features:** Characterized by a large, fleshy, annual polypore with a scurfy, yellow-orange to orange-brown or pale purple-brown cap and a white spore print. *Bondarzewia berkeleyi* (Fr.) Bondarzew & Singer is associated with angiosperms, appears restricted to eastern North America, fruits in imbricate clusters of tan to ochraceous caps, and has slightly larger (7-9 x 6-8  $\mu\text{m}$ ), amyloid, ridged, subglobose spores.

**Distribution:** Also known from British Columbia, Germany and Switzerland. Known from nineteen sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Prairie Creek State Park; **OREGON**, Benton Co., Siuslaw National Forest, Mary's Peak, summit loop trail, near campground; Clatsop Co., Fort Stevens State Park; Coos Co., Millicoma Myrtle State Park; Douglas Co., Bureau of Land Management (BLM), Roseburg District, near Lally Creek; BLM, Eugene District, Elk Meadows Research Natural Area; Lane Co., BLM, Eugene District, near Rd. 23-3-12; Lincoln Co., Siuslaw National Forest, Cascade Head Experimental Forest, near Tillamook Co. line on along Hwy. 12; Linn Co., Willamette National Forest, Pyramid trail; Multnomah Co., Mount Hood National Forest, Larch Mountain summit; Yamhill Co., BLM, Salem District, near McLafferty Creek; **WASHINGTON**, Lewis Co., Gifford Pinchot National Forest, Cispus Environmental Learning Center; Grays Harbor Co., Olympic National Forest, near Humptulips; Olympic National Park, Irely Lake trail; Jefferson Co., Olympic National Park, Hoh Recreation Area, Hoh River trail; Pierce Co., Mount Rainier National Park, Old Tahoma campground; Mount Rainier National Park, lower Tahoma Creek; Snohomish Co., Mount Baker-Snoqualmie National Forest, Barlow Pass; Whatcom Co., Birch Bay State Park. Other potential sites with vague locality data extend the range to Mendocino Co., CALIFORNIA.

**Substrate and habitat:** Sporocarps occur in late successional conifer forests in Washington (O'Dell, unpublished data), Oregon and California. None of the collections examined included habitat data beyond indicating the presence of conifers (mixed with hardwoods in two cases). Sporocarps are often associated with stumps or snags.

**Season:** Fruits from August through December.

**References:** GILBERTSON, R.L. AND L. RYVARDEN. 1986. North American Polypores. Vol. 1. FungiFlora, Oslo. GILBERTSON, R.L. AND L. RYVARDEN. 1987. North American Polypores. Vol. 2. FungiFlora, Oslo. REDHEAD, S. A. AND L. L. NORVELL. 1993. Notes on *Bondarzewia*, *Heterobasidion*, and *Pleurogala*. Mycotaxon 48:371-380.

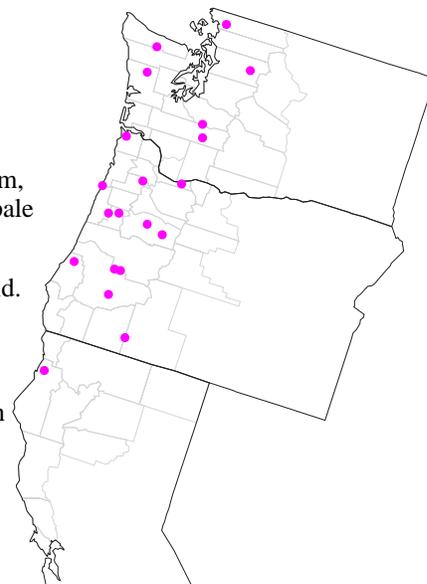
**NOTES:**

Photo courtesy of Dr. M.A. Castellano  
Photo courtesy of Dr. M.A. Castellano

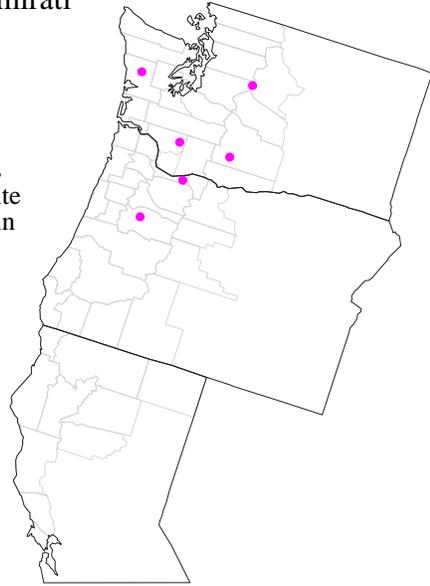


***Bridgeoporus nobilissimus*** (W.B. Cooke) Volk, Burdsall & AmmiratiROD name *Oxyporus nobilissimus*

Family Polyporaceae

Morphological Habit polypore

**Description:** **SPOROCARPS** perennial, 30-140 x 25-95 x 30-100 cm, sessile, unguulate, imbricate, or centrally substipitate. Cap surface a dense mat of white mycelial fibers in youth, often matted, becoming cinnamon brown or darker in age, often appearing green due to epiphytic algae. **FLESH** up to 1.5 cm thick, white, tough, rubbery, and fibrous when fresh, cinnamon-buff or ochraceous. **PORES** concolorous with context, round, 2 per mm, 2-7 mm long in mature layers, not becoming stuffed, stratified, with a fleshy layer 2-3 mm thick between each successive pore layer. **SURFACE FIBERS** of the pileus 10-30 mm X (50-) 60-75 mm, with frequent branching and anastomosing. The fibers are composed of bundles of simple-septate, parallel hyphae, 2-3 mm diam, hyaline to yellow-brown, thin- to slightly thick-walled, infrequently branching. **CONTEXT HYPHAE** 3-4 mm diameter, thin-walled to thick-walled, simple-septate, hyaline to pale yellow-brown, smooth, rarely branched. **TRAMAL HYPHAE** like those of context, but some becoming thick walled and growing into/through the subhymenium, and giving rise to pseudocystidia. **PSEUDOCYSTIDIA** up to 125 mm x 6-12 mm, cylindrical to broadly subulate, arising deep in the tramal tissue, evident before formation of basidia, walls slightly thickened or up to 4 um thick in age, the pseudocystidia often with a hyaline, crystalline cap. **BASIDIA** 12-18 x 4-10 mm, pyriforme, 4-spored, simple-septate at base, sterigmata 2-3 um long. **SPORES** broadly ovoid, 5.5-6.5 x 3.5-4.5 mm, hyaline, smooth, thin-walled, inamyloid. (Description from Volk, Burdsall & Ammirati)



**Distinguishing Features:** Characterized by the sissal door mat appearance of the sporocarp surface and the alternating white and brown tube layers in the sporocarp. The conspicuous and often extremely large size and fuzzy surface of the perennial sporocarp makes this species easily noticed and identifiable in the field.

**Distribution:** Endemic to Oregon and Washington, occurring in the Cascades from Linn Co., Oregon north to King Co., Washington and in the Olympic Mountains in Grays Harbor Co., Washington. A site has been reported, but not verified, in the Coast Ranges of Oregon. All nine known sites are on Federal land within the range of the northern spotted owl.

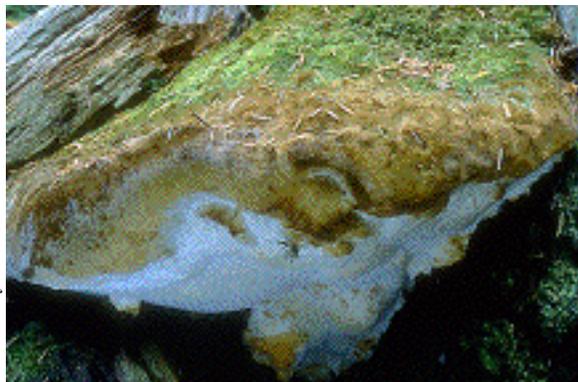
**Substrate and habitat:** Sporocarps occur in late successional conifer forests in the Pacific Silver fir zone and have *Abies procera* and possibly *A. amabilis* as the host.

**Season:** Forms new fertile tissue from August through November. The perennial sporocarp is observable throughout the year.

**References:** BURDSALL, JR., H.H., T.J. VOLK, AND J.F. AMMIRATI, JR. 1996. *Bridgeoporus*, a new genus to accommodate *Oxyporus nobilissimus* (Basidiomycotina, Polyporaceae). Mycotaxon 60:387-395.

**NOTES:**

Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. L.L. Norvell

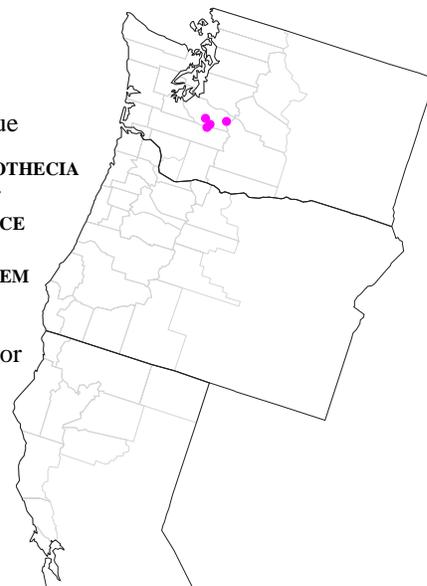


***Bryoglossum gracile* (P. Karst.) Redhead**ROD name *Bryoglossum gracile*

Family Geoglossaceae

Morphological Habit earth tongue

**Description:** **SPOROCARPS** stipitate, apotheciate, 10-30 (-50) mm tall. **APOTHECIA** irregular, varying from nearly plane to recurved to capitate, folded, ovoid, or ellipsoid, 2-6 x 1.5-7 mm, the margin distinct or indistinct. **HYMENIAL SURFACE** rugose, smooth, or convoluted, bright orange to pale orange, orange-tan or ochraceous. **ABHYMENIAL SURFACE** seldom visible unless margin distinct. **STEM** terete, to 1 mm in diam, creamy white to tinged with color of hymenium but typically paler, invested with nearly hyaline minute scales and hairs. **ASCI** inoperculate, bluing at the tip in Melzer's reagent. **PARAPHYSES** straight, not or only slightly enlarged at the apex. **SPORES** fusiform to cylindrical but tapered, (8-) 9-13 (-16) x 2-3  $\mu\text{m}$ , hyaline, aseptate to uniseptate (septum when present transverse), minutely warty.



**Distinguishing Features:** Characterized by a bright orange to pale orange, orange-buff or ochraceous apothecium on a minutely scaly, pale orange to white stem. It is one of several "earth-tongues" that grow in association with mosses. The orange-colored apothecium, scaly stem, autumnal fruiting and bryophilous habit distinguish it. *Mitrula sensu stricto* differs in fruiting in the spring, on organic material in very wet habitats (e.g., vernal pools, bogs) in subalpine to temperate regions; the stem lack scales. *Heyderia abietis* (Fr. : Fr.) Link differs in being smaller and slighter, in having a pale brown to pink buff, smooth head and pale to dark brown stem, and in fruiting on conifer needles in late summer and fall.

**Distribution:** Also known from Canada and Scandinavia. Known from four sites within the range of the northern spotted owl: **WASHINGTON, Lewis Co.**, Mount Rainier National Park, Narada Falls; **Pierce Co.**, Mount Rainier National Park, Longmire; Mount Rainier National Park, Sunrise picnic area; Mount Rainier National Park, Andrews Creek. Not known from California or Oregon.

**Substrate and habitat:** Sporocarps occur in scattered to gregarious groups associated with mosses in the Northern Hemisphere in subalpine to arctic habitat. It is not clear whether it is strictly associated with forest habitat or whether it actually parasitizes moss.

**Season:** Fruits from August through October.

**References:** BREITENBACH, J., AND F. KRÄNZLIN. 1984. Fungi of Switzerland. Volume 1. Ascomycetes Luzern: Verlag Mykologia. 313 pp. REDHEAD, S.A. 1977. The genus *Mitrula* in North America. Canad. J. Bot. 5:307-325. REDHEAD, S.A. 1989. A biogeographical overview of the Canadian mushroom flora. Can. J. Bot. 67:3003-3062.

**NOTES:**

Photo courtesy of Dr. G. Gulden  
Photo courtesy of Dr. J.A. Weber

Photo available only in print version

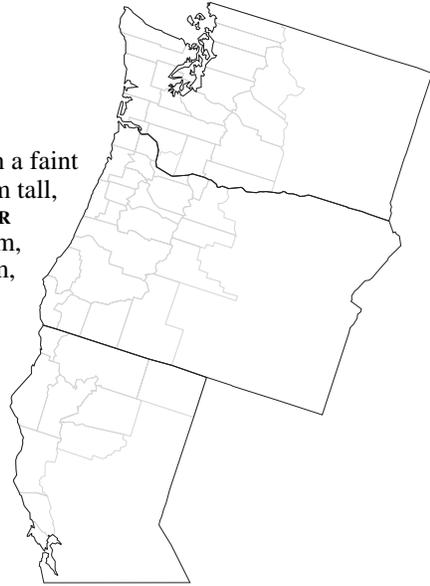
*Cantharellus formosus* CornerROD name *Cantharellus formosus*

Family Cantharellaceae

Morphological Habit chanterelle

**Description:** CAP 2-14 cm in diam, dull orange to orange, sometimes with a faint pink coloration, margin enrolled to flat to trumpet shaped. STEM 40-80 mm tall, 4-22 mm in diam, equal to tapered downwards, concolorous with cap. **ODOR** sweet. **TASTE** pleasant. **PILEIPELLIS** a turf of free hyphal ends, 4-9  $\mu\text{m}$  in diam, with brown-colored contents. **BASIDIA** 4-6 spored, clavate, 86-120 x 4.5-6  $\mu\text{m}$ , with long sterigmata up to 7  $\mu\text{m}$ . **CYSTIDIA** absent. **CLAMP CONNECTIONS** abundant. **SPORES** broadly ovoid to ellipsoid, 7-9 x 4.5-6  $\mu\text{m}$ , smooth, thin-walled, hyaline, inamyloid.

**Distinguishing Features:** Characterized by the finely scaly, yellow-brown cap, yellow to orange hymenial ridges and a white to pink spore print. *Cantharellus formosus* was listed in the FEMAT and the ROD before the taxonomy was clearly understood. Further examination of collections labeled *C. formosus* and *C. cibarius* from within the range of the northern spotted owl revealed them to be conspecific. *Cantharellus cibarius* does not occur in western North America. The difficulty lies in the highly variable characters of *Cantharellus formosus*. The extra attention focused on *Cantharellus formosus* allowed Redhead et al. (1998) to clarify the species concept of *Cantharellus cibarius* and *Cantharellus formosus*.



**Distribution:** Known to be common and widespread throughout the region from coastal northern California, north to Vancouver, British Columbia, Canada.

**Substrate and habitat:** Forms solitary to clustered sporocarps in association with various Pinaceae spp., particularly *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* in second growth and old-growth forests.

**Season:** Fruits from September through November.

**References:** REDHEAD, S.A., NORVELL, L.L., AND DANELL, E. 1998. *Cantharellus formosus* and the Pacific golden chanterelle harvest in western North America. Mycotaxon 65:285-322.

**NOTES:**

Photo courtesy of D. Pilz



Photo courtesy of D. Pilz

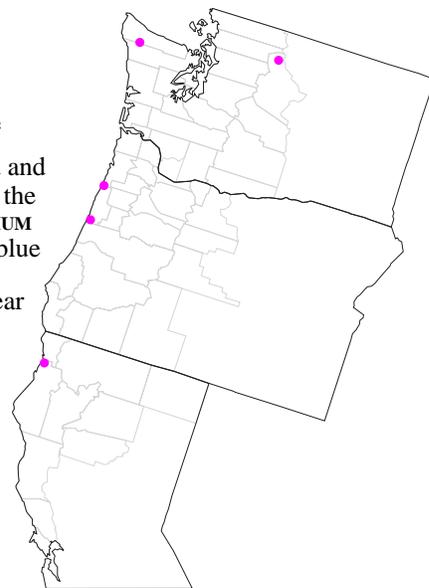
*Chamonixia caespitosa* RollandROD name *Chamonixia pacifica* sp. nov. # Trappe 12768

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** subglobose, 5-26 x 8-40 mm, the base indented and often with a stem-columella 2-3 mm thick that protrudes up to 5 mm beyond the gleba and is often recurved and appressed against the lower peridium. **PERIDIUM** felty, white or, in well matured specimens olivaceous, quickly staining deep blue when exposed or cut, readily separable. **GLEBA** with labyrinthine locules, nongelatinized, in youth white and staining blue when exposed, especially near the peridium, at maturity dark brown from spores massed on the locule surfaces. **STEM-COLUMELLA** varying from percurrent, 2-3 mm thick and protruding from the sporocarp base to only a small basal pad, the context at first white but later often becoming yellow to pale orange-brown near and below the base, quickly blueing when exposed. **ODOR** pleasant, slightly resinous. **TASTE** not distinctive. **PERIDIAL EPICUTIS** of loosely interwoven to appressed, hyaline, thin-walled hyphae 7-9  $\mu\text{m}$  in diam. **PERIDIAL SUBCUTIS** of several tiers of more or less isodiametric, hyaline, thin-walled cells up to 30  $\mu\text{m}$  in diam, often in radially aligned rows. **TRAMA** of hyaline, subparallel hyphae 3-5  $\mu\text{m}$  in diam, the walls thin or slightly gelatinous thickened. Subhymenium of isodiametric cells. **BASIDIA** with 4-spored, 32-38 x 15-20  $\mu\text{m}$ .

**CYSTIDIA** absent. **CLAMP CONNECTIONS** absent. **SPORES** broadly ellipsoid, 13-22 x 10-16  $\mu\text{m}$  excluding the ornamentation of 6-14 straight to spiraling, often forked, dark brown, longitudinal ridges 3-5  $\mu\text{m}$  tall, the lateral margins of the ridges ragged, the ridges not meeting at the spore apex, sterigmatal attachment  $\pm 1 \times 2 \mu\text{m}$ .



**Distinguishing Features:** Characterized by the blue staining peridium, dark brown spores with longitudinal ridges and nongelatinized sterile tissues of the sporocarp.

**Distribution:** Also known from New York, France, and Germany. Known from five sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Redwoods State Park, Prairie Creek; **OREGON**, Lincoln Co., Siuslaw National Forest, Cape Perpetua; **Tillamook Co.**, Siuslaw National Forest, Cascade Head Experimental Forest, summit of old Hwy. 101; **WASHINGTON**, Chelan Co., Wenatchee National Forest, Rainy Pass; **Jefferson Co.**, Olympic National Forest, Lost Creek.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Abies amabilis* and *Tsuga* sp. at high-elevation and *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* in coastal forests.

**Season:** Fruits from June through November.

**References:** ROLLAND, L. 1899. Excursion à Chamonix - été et automne 1898. Bull. Soc. Mycol. France 15:73-78.

**NOTES:**

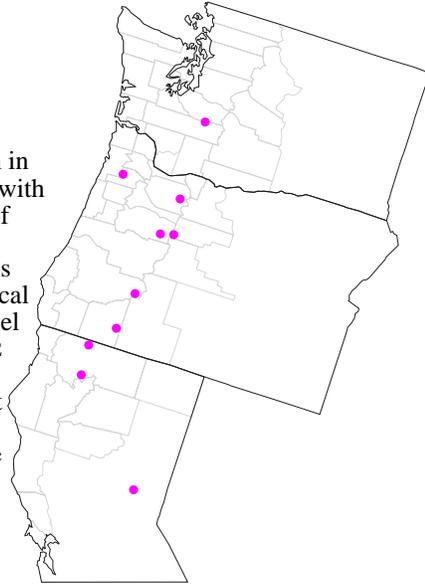
Photo courtesy of Dr. M.A. Castellano

*Choiromyces alveolatus*(Harkness) TrappeROD name *Choiromyces alveolatus*

Family Tuberales

Morphological Habit sequestrate

**Description:** **SPOROCARPS** white, becoming yellow or brown, up to 1.3 cm in diam, slightly lobed, surface scabrous, sometimes pubescent. **GLEBA** yellow with orange-colored dots separated by pale-colored veins; outer cortical "tissue" of branched intermingled hyphae, often projecting from surface, forming hairs; structure beneath, becoming pseudoparenchymatous, of distinctly angled cells reaching 20 µm in diam, cells becoming smaller within, changing to subcortical structure of compactly arranged, sometimes connected hyphae running parallel to surface of ascocarp; thickness of peridium, 220-600 µm. **VENAE EXTERNAE** generally short, lined with paraphyses, filled with loose, branched hyphae similar to outer cortical layer. **VENAE INTERNAE** much branched, broadened at angles, varying in width but mostly slender, of compact hyphal structure similar to subcortex, becoming pseudoparenchymatous in places. **ASCI** borne in distinct large "nests", generally irregularly bent or variously shaped by inward extending branches of venae internae, generally long stipitate, crowded, club-shaped, more or less deformed, 80-104 x 64-72 µm, separated by fascicled, swollen-tipped paraphyses, 1- to 4-spored (generally 4-spored). **SPORES** globose, 22-36 µm, yellow or brown, minutely alveolate, walls of alveoli half as wide as alveolar cavities, 10-14 alveoli across diam.



**Distinguishing Features:** Characterized by the lobed sporocarp, white to yellow or brown and scabrous or sometimes pubescent peridium and the gleba which is yellow-orange with pale colored veins.

**Distribution:** Endemic to California and Oregon. Known from nine sites within the range of the northern spotted owl: **CALIFORNIA, Siskiyou Co.**, Klamath National Forest, head of the south fork of Scott River, Hidden Lake trail; Fruit Growers Supply Co. land, Beaver Creek; **OREGON, Clackamas Co.**, Mount Hood National Forest, High Rock; **Douglas Co.**, Umpqua National Forest, Dog Prairie; **Jackson Co.**, Rouge River National Forest, Daley Creek campground; **Linn Co.**, Willamette National Forest, Deer Creek rd., south of Tombstone Pass; **Jefferson Co.**, Deschutes National Forest, 200 meters west of FS Rd. 2076 off Hwy. 20; **Yamhill Co.**, Meadow Lake rd., 14 miles west of Carlton; **WASHINGTON, Lewis Co.**, Mount Rainier National Park, Eagle Peak trail. In addition, it is known from outside the assessment area from five sites, four on State land in Placer Co., California and one on the Tahoe National Forest in Sierra Co., California.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Abies procera*, *Abies* spp., *Pinus contorta*, *P. ponderosa*, *Pseudotsuga menziesii*, *Tsuga heterophylla*, and *T. mertensiana* above 4,000 ft. elevation.

**Season:** Fruits from May through November.

**References:** HARKNESS, H.W. 1899. Californian hypogeous fungi. Proc. Calif. Acad. Sci. Third series 1(8) 241-292. TRAPPE, J.M. 1975. Generic synonyms in the Tuberales. Mycotaxon 2:109-122.

**NOTES:**

Photo courtesy of Dr. M.A. Castellano  
Photo courtesy of Dr. M.A. Castellano



## *Choiromyces venosus*(Fries) Th. Fries

ROD name *Choiromyces venosus*

Family Tuberales

Morphological Habit sequestrate

**Description:** **SPOROCARPS** irregularly folded-lobed, up to 10 cm broad or more, almost smooth, slightly fibrillose, more so in the folds, pallid, pink-buff or paler, in places spotted vinaceous buff to fawn color, peridium thin. **GLEBA** solid with gray-buff later brown, labyrinthine parts. **ODOR** faint when fresh (like *Tuber rufum*), much stronger when decaying. **PERIDIUM** 400  $\mu\text{m}$  thick, with an outer pseudoparenchymatic layer, appearing faintly brown, main layer hyaline, of interwoven hyphae; sterile part of gleba of hyaline, loosely woven hyphae, 5  $\mu\text{m}$  broad, a few up to 15  $\mu\text{m}$ , fertile parts of similar hyphae more densely packed. **ASCI** sack-shaped, often with a long stipe, sporiferous part 100-120 x 50-60  $\mu\text{m}$ , stem up to 120  $\mu\text{m}$  long, 8 spores (rarely fewer) in two rows or irregular. **SPORES** globose, 22-30  $\mu\text{m}$  broad including spine and rods, 3-6  $\mu\text{m}$  high, 16-19  $\mu\text{m}$  broad without ornamentation, pale brown at maturity.

**Distinguishing Features:** Characterized by the unique spore ornamentation of spines and rods that are up to 6  $\mu\text{m}$  high and 1  $\mu\text{m}$  wide.

**Distribution:** Also known from Europe and West Virginia. Known from a single site within the range of the northern spotted owl which is on Federal land: **OREGON, Lane Co.**, Bureau of Land Management, Eugene District, Mohawk Research Natural Area.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Pseudotsuga menziesii* and *Tsuga heterophylla* at low-elevation.

**Season:** Fruits in October.

**References:** FRIES, E. 1830. In, Lindblom, Kongl. Vet. Ak. Handl. p. 248. FRIES T.C.E. 1909. Skandinaviens tryfflar och tryffelliknande svampar. Sv. Bot. Tidskr. 3:320.

### NOTES:



Photo courtesy of Dr. J.M. Trappe  
Photo courtesy of Dr. E. Danell

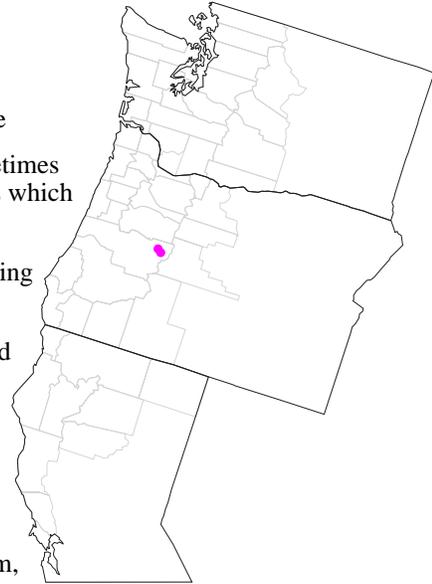
Photo available only in print version

*Chroogomphus loculatus* Trappe & MillerROD name *Chroogomphus loculatus*

Family Gomphidiaceae

Morphological Habit sequestrate

**Description:** CAP 2.5-7.0 broad, convex, margin expanding fully or sometimes remaining almost unexpanded, dry, with appressed or repent fibrillose scales which are dark olive over a pale orange to pale yellow ground color, pale brown. **HYMENOPHORE** very irregular forming enclosed locules due to numerous intervenose connections, clearly loculate, decurrent, pale pink at first darkening to brown orange in age. **STEM** 2.5-8 cm long, 1.5-3.5 cm wide, somewhat ventricose tapering to a dull pointed base, often fused to 3/4 or more of total length, dry, pale orange or vinaceous tinged above annular zone, below pallid to yellow, streaked with olivaceous fibrils, olive tomentose over the base. Mycelium surrounding the base of the sporocarp pink, hyphae 6.5-8.5  $\mu\text{m}$  diam, thin- or thick-walled, amyloid. **FLESH** pale orange but often olive stained near the base. **PARTIAL VEIL** fibrillose remaining in some as an obscure fibrillose zone. **PILEIPELLIS** of nonviscid, innate, loosely tangled to erect, thin-walled hyphae (7-) 13-22  $\mu\text{m}$  diam, walls somewhat roughened, either amyloid or nonamyloid to yellow brown, contents of all cells appear hyaline. **TRAMA OF PILEUS** of more tightly interwoven hyphae 13-30  $\mu\text{m}$  diam, thin-walled, amyloid. **TRAMA OF LOCULE WALLS** of interwoven hyphae 5-20  $\mu\text{m}$  diam, thin-walled, darkly amyloid as in pileus trama. **BASIDIA** 48-72 x 11-15  $\mu\text{m}$ , clavate, thin-walled, 4-spored, hyaline in Melzer's reagent and KOH. **PLEUROCYSTIDIA AND CHELOCYSTIDIA** 108-200 (-260) x (13-) 17-29  $\mu\text{m}$ , numerous, nearly cylindrical, long fusiform to elongate clavate, walls up to 1.5-3  $\mu\text{m}$ , hyaline to pale yellow contents in Melzer's reagent, protruding 1/2 to 2/3 above the hymenium, sometimes partially covered with dingy yellow brown encrusted material. **CLAMP CONNECTIONS** absent on sporocarp hyphae but present on hyphae of basal mycelium. **SPORES** subfusiform in profile, ovate to elongate-ovate in face view, (15-) 19-30 x 6-9  $\mu\text{m}$ , walls up to 1  $\mu\text{m}$  thick, deep red, ochraceous to yellow contents in Melzer's reagent, in KOH brown-black.



**Distinguishing Features:** Characterized by the large, smoky black spores, its nongelatinous cuticle and pigmented pileus tissue which is amyloid, and the loculate to strongly intervenose nature of the hymenophore.

**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Lane Co., Willamette National Forest, Lamb Butte Scenic Area, along trail to Potholes Creek.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with various Pinaceae spp., particularly *Tsuga mertensiana* at 4,300 ft. elevation.

**Season:** Fruits in October.

**References:** MILLER, JR., O.K., AND TRAPPE, J.M. 1970. A new *Chroogomphus* with loculate hymenium and a revised key to section Floccigomphus. Mycologia 62:831-836.

**NOTES:**



Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. T. O'Dell



*Clitocybe senilis* (Fries) Gillet

**ROD name** *Clitocybe senilis*

**Family** Tricholomataceae

**Morphological Habit** mushroom

**Description:** CAP 1.5-5.5 mm diam, convex to plane, nonstriate; surface moist to dry, matted fibrillose when young, becoming appressed fibrillose in age, dark gray at first, fading to gray-tan or pale ochraceous. **ODOR AND TASTE** strongly farinaceous. **GILLS** decurrent, close, narrow, white at first then pale gray. **STEM** 20-45 x 3-7 mm, equal, glabrous, white at first but becoming gray in age, base with white tomentum and coarse white rhizomorphs. **PILEIPELLIS** of young specimens a palisade of erect, cystidioid, terminal cells, these cylindrical to clavate, 20-37 x 5-8 (-12.5)  $\mu\text{m}$ , with pale brown pigments, these elements becoming repent in mature caps. **BASIDIA** 4-spored. **CYSTIDIA** absent. **CLAMP CONNECTIONS** present. **SPORES** ellipsoid, 4-6 x 2.5-3.5  $\mu\text{m}$ , smooth, inamyloid, white spore print.

**Distinguishing Features:** Characterized by a dark gray cap that fades to gray-tan with a matted fibrillose surface when young; a strongly farinaceous odor and taste; decurrent pale gray gills; a gray, glabrous stem arising from coarse, white rhizomorphs; and a pileipellis with a thin palisade of cylindrical to clavate cystidia-like elements.

**Distribution:** Also known from eastern North America and Sweden. Known from 2 sites within the range of the northern spotted owl; **OREGON**, Tillamook Co., Neskowin Creek; **WASHINGTON**, Snohomish Co., Mount Baker-Snoqualmie National Forest, Barlow Pass. Not known from California.

**Substrate and habitat:** Forms gregarious to subcaespitose sporocarps in duff, restricted to conifer forests.

**Season:** Fruits from July through October.

**References:** BIGELOW, H.E. 1982. North America species of *Clitocybe*. Part I. Beih. Nova Hedwigia 72: 1-280. BIGELOW, H.E. 1985. North America species of *Clitocybe*. Part II. Beih. Nova Hedwigia 81:281-471.

**NOTES:**

Photo courtesy of Dr. J. Ammirati

*Clitocybe subditopoda* PeckROD name *Clitocybe subditopoda***Family** Tricholomataceae      **Morphological Habit** mushroom

**Description:** CAP 15-50 mm diam, convex at first, becoming plane to depressed in age, finely pellucid striate when moist; surface moist to dry, glabrous, hygrophanous; at first watery gray-brown with a slight vinaceous tint, fading to gray, vinaceous buff, to gray-buff in age and with moisture loss. **ODOR AND TASTE** strongly farinaceous. **GILLS** adnate to moderately decurrent, close, narrow, gray with a vinaceous tint. **STEM** 20-60 x 3-6 mm, equal, watery gray-brown or when young covered with a thin layer of appressed white fibrils, base with watery gray tomentum. **PILEIPELLIS** a cutis of repent, cylindrical hyphae 2.5-5 µm diam, slightly gelatinous, with pale brown pigments. **BASIDIA** 4-spored. **CYSTIDIA** absent. **CLAMP CONNECTIONS** present. **SPORES** ellipsoid, 3.5-6 x 2.5-4 µm, smooth, inamyloid, white spore print.

**Distinguishing Features:** Characterized by a relatively small, hygrophanous, glabrous cap colored watery gray-brown when fresh and fading to gray-tan in age, often striate when moist; a strong farinaceous odor and taste; close, adnate to moderately decurrent, gray to vinaceous tan gills; a relatively thick (3-6 mm), equal, watery gray-brown stem that lacks coarse white rhizomorphs; and growth in rings on needle beds under pine and spruce. Microscopically, this taxon is distinct because of relatively small, inamyloid, smooth, ellipsoid spores, presence of clamp connections, and a pileipellis composed of repent, cylindrical hyphae with pale brown pigments.

**Distribution:** Also occurs in northeastern North America. Known from six sites within the range of the northern spotted owl; **OREGON**, Clackamas Co., Mount Hood National Forest, near mile bridge; Mount Hood National Forest, above Welches; **WASHINGTON**, Clallam Co., Olympic National Park, Mount Angeles; **Jefferson** Co., Olympic National Park, near Hoh River; **Grays Harbor** Co., Olympic National Forest, Quinault Lake; Olympic National Forest, Quinault Research Natural Area. Not known from California.

**Substrate and habitat:** Forms gregarious to subcaespitose sporocarps in fairy rings on needle beds of *Picea* spp. and *Pinus* spp., in coastal to mid-elevation conifer forests.

**Season:** Fruits from October through early December.

**References:** BIGELOW, H.E. 1982. North America species of *Clitocybe*. Part I. Beih. Nova Hedwigia 72:1-280. BIGELOW, H.E. 1985. North America species of *Clitocybe*. Part II. Beih. Nova Hedwigia 81:281-471.

**NOTES:**

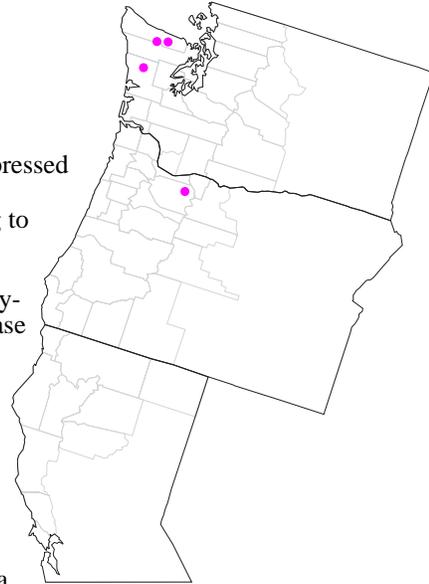


Photo courtesy of Dr. T. Baroni

## *Collybia bakerensis* A.H. Smith

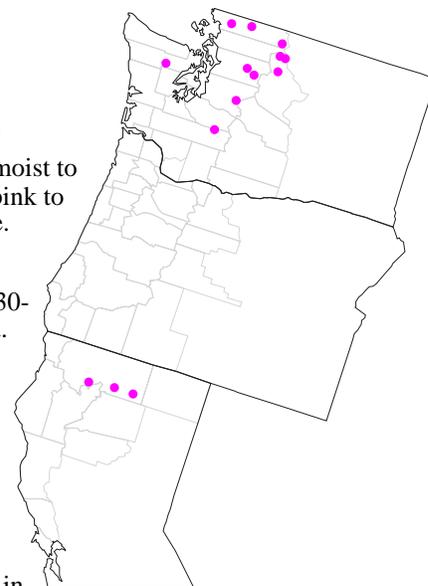
ROD name *Collybia bakerensis*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 5-40 mm diam, convex to plano-convex; surface dull, moist to dry, glabrous to finely granulose, white overall, in age disc often becoming pink to pale gray-orange. GILLS adnate to adnexed, close, white, flushed pink in age. STEM 10-25 (-40) x 2-3.5 mm, cylindric, often curved, dry, apex white and prunose, base pubescent, pink to gray-red. ODOR AND TASTE not distinctive. PILEIPELLIS AND TRAMAL HYPHAE inamyloid, nongelatinous. CAULOCYSTIDIA 30-48 x 8-15  $\mu$ m, cylindric to broadly clavate, or contorted. BASIDIA 2-4-spored. PLEUROCYSTIDIA absent. CHEILOCYSTIDIA 22.5-45 x 6-13.5  $\mu$ m, of two types: 1) cylindric to broadly clavate and obtuse; 2) irregularly cylindric and nodulose to lobed. PILEIPELLIS a trichodermium when young or cutis when mature, composed of hyaline, smooth, cylindric hyphae. CLAMP CONNECTIONS present. SPORES ellipsoid, 5.5-7.5 x 3-4.5  $\mu$ m, smooth, inamyloid, hyaline.

**Distinguishing Features:** Characterized by a white convex cap; relatively narrow, close, adnate to adnexed white gills; a small, white, subsinistitious to noninsistitious stem; a tendency for sporocarps to blush pink in age; and abundant, cylindric to nodulose cheilocystidia.



**Distribution:** Also known from several additional sites outside of the assessment area, including one site in British Columbia and several from non-owl habitat in northern California, Colorado, and Idaho. Known from fourteen sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Shasta-Trinity National Forest, Deadhorse summit; Shasta-Trinity National Forest, Sand Flat campground; Klamath National Forest, Carter Meadows; **WASHINGTON**, Chelan Co., Wenatchee National Forest, Lake Ann; Wenatchee National Forest, Glacier Peak Wilderness, Lyman Lake; **Jefferson Co.**, Olympic National Park, Enchanted Valley; **King Co.**, Mount Baker-Snoqualmie National Forest, Asahel Curtis nature trail; **Lewis Co.**, Mount Rainier National Park, Eagle Peak; **Skagit Co.**, Wenatchee National Forest, Lewis Lake; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Perry Creek, Forgotten Mountain trail; Mount Baker-Snoqualmie National Forest, Barlow Pass; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, Silver Fir campground; near Anderson Creek; Ross Lake National Recreational Area, Panther Creek. No sites occur in Oregon.

**Substrate and habitat:** Usually found scattered to gregarious on fallen conifer logs; in California on *Abies* logs soon after melting snow above 7,500 ft. elevation in the Sierra Nevada and Cascade mountain ranges; in Washington on *Tsuga* logs.

**Season:** Fruits from May through early October.

**References:** DESJARDIN, D. E., AND R.E. HALLING. 1987. California Collybias I. *Collybia bakerensis*: a common snowbank agaric. Mycotaxon 29:321-327.

### NOTES:



Photo courtesy of Dr. J. Ammirati

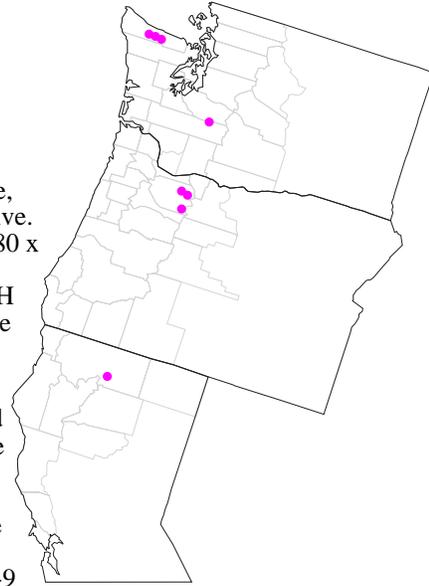
*Cortinarius boulderensis* A.H. SmithROD name *Cortinarius boulderensis*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 20-40 mm broad, conic to campanulate/plane, silky in appearance, dull to violaceous brown, becoming darker in age. **FLESH** fragile, concolorous with cap, fading to vinaceous-tan. **ODOR AND TASTE** not distinctive. **GILLS** adnate with a decurrent tooth, moderately close, gray-lilac. **STEM** 50-80 x 4-7 mm, with red veil (cortina) and annular zones, patches and zones of vinaceous red fibrils, apex dull violet, slightly bulbous base pale brown, KOH negative. **SPORES** ellipsoid, 7-8 (-9) x 4-5.5  $\mu\text{m}$ , verrucose, rusty brown spore print.

**Distinguishing Features:** Characterized by a small, silky, brown gilled mushroom with gray-lilac gills, a red veil, a rusty-brown spore print, and one or more rings or patches of red fibrils on the stem, particularly intense at the stem base. *Cortinarius paragaudis* are tinged with a deep brown red color (particularly the basal mycelium), the gill and cap trama become deep purple when mounted in KOH; fresh specimens are deep purple at the stem base. *Cortinarius spilomeus* (Fr.) Fries has a dry opaque cap and broader spores (6-9 x 6-7  $\mu\text{m}$ ). *Cortinarius subtestaceus* A.H. Smith has larger spores, a more tomentose cap, larger size, and differently colored gills and stem apex.



**Distribution:** Endemic to Oregon and Washington. Known from seven sites within the range of the northern spotted owl: **OREGON, Clackamas Co.**, Zigzag; Mount Hood National Forest, Twin Bridges campground; **Wasco Co.**, Mount Hood National Forest, Warm Springs River, Skyline Rd.; **WASHINGTON, Clallam Co.**, Olympic National Park, Olympic Hot Springs; Olympic National Park, Soleduc campground B; Olympic National Park, Elwha River trail; **Lewis Co.**, Mount Rainier National Park, Eagle Peak.

**Substrate and habitat:** Sporocarps are usually occur in association with the roots of various Pinaceae spp.

**Season:** Fruits in May and from September through November.

**References:** SMITH, A.H. 1944. New and interesting Cortinarii from North America. Lloydia 7:163-235.

**NOTES:**

Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. T. O'Dell



## *Cortinarius magnivelatus* Dearness ex Fogel

**ROD name** *Cortinarius magnivelatus*

**Family** Cortinariaceae

**Morphological Habit** sequestrate

**Description:** CAP 30-65 mm broad, convex becoming plano-convex, sometimes becoming shallowly depressed to umbonate; surface moist to dry; usually appearing glabrous when young, occasionally silky-appressed fibrillose, becoming innately fibrillose to somewhat tomentose, white when young, becoming pale yellow to yellow, then moderate orange-yellow to dark orange-yellow with age or bruising; margin incurved to strongly decurved; attached to the stem by a membranaceous veil during all stages of development. **GILLS** adnate to shallowly depressed; white to pale orange-yellow when young becoming near brown-orange to yellow-brown when mature, unchanging when bruised; thin, not fragile, even when dry; several tiers of gills present at margin; abundantly forked near and at the stem; margin entire becoming locally eroded at maturity, entirely covered by veil. **VEIL** (cortina) persistent as a heavy, thick membrane, remaining attached to the stem, satiny-white, spores deposited inside. **STEM** 15-60 x 10-30 mm broad at apex, typically somewhat bulbous at base, occasionally equal to tapering slightly, flesh white, unchanging. **ODOR AND TASTE** not distinctive. **PILEUS CUTICLE** differentiated only as a narrow layer of compactly interwoven hyphae 4-5 (-8)  $\mu\text{m}$  in diam obscured by organic debris. **FLESH** composed of interwoven, hyaline 4-10 (-15)  $\mu\text{m}$  in diam hyphae. **STEM** composed of dextrinoid, appressed parallel hyphae 3-5  $\mu\text{m}$  in diam, a few 10  $\mu\text{m}$  in diam. Veil composed of hyaline, dextrinoid, thin-walled, appressed, parallel hyphae 3-6  $\mu\text{m}$  in diam. **CLAMP CONNECTIONS** common. **BASIDIA** 4-spored, 27-40 x 7-10  $\mu\text{m}$ , clavate, hyaline, thin-walled, base truncate. **STERIGMATA** 2-4 x 1.5-2  $\mu\text{m}$ , conical, straight to slightly curved. **PLEUROCYSTIDIA** absent. **CHEILOCYSTIDIA** reviving poorly, 18-23 x 4-6  $\mu\text{m}$  hyaline, thin-walled, cylindrical, ventricose or nearly filamentous. **SPORES** ellipsoid, 8.5-11 (-14) x 5-8  $\mu\text{m}$ , asymmetrical, minutely verrucose to rugulose, pale orange-yellow, thin-walled, immature spores dextrinoid.



**Distinguishing Features:** Characterized by white sporocarps and a white membranous veil that darkens on handling.

**Distribution:** Also known from Lassen Volcanic National Park, through the southern Sierra Nevada mountains and into Nevada and Utah. Known from two sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Bear Springs; **OREGON**, Jackson Co., along highway 5 at the pass near Mount Ashland. No sites occur in Washington.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Abies concolor*, *A. bifolia*, *A. magnifica*, *Picea engelmannii*, *Pinus lambertiana*, and *P. ponderosa* above 4,500 ft. elevation.

**Season:** Fruiting from May through August.

**References:** FOGEL, R. 1994. Materials for a hypogeous mycoflora of the Great Basin and adjacent cordilleras of the western United States II. Two subemergent species *Cortinarius saxamontanus*, sp. nov., and *C. magnivelatus*, plus comments on their evolution. *Mycologia* 86:795-801. THIERS, H., AND SMITH, A.H. 1969. Hypogeous cortinari. *Mycologia* 61:526-536.

### NOTES:



Photo courtesy of Dr. M.A. Castellano  
Photo courtesy of S. Trudell

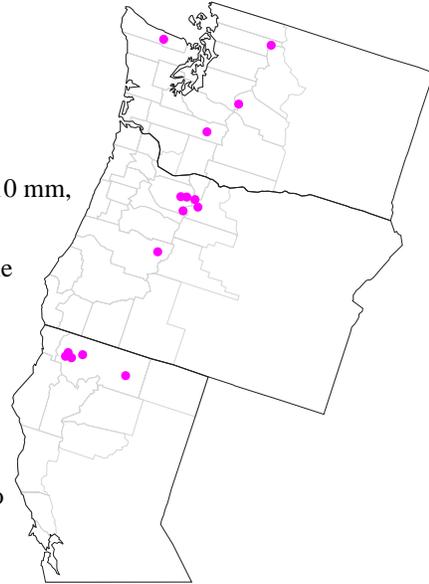
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***Cortinarius olympianus* A.H. Smith**ROD name *Cortinarius olympianus***Family** Cortinariaceae      **Morphological Habit** mushroom

**Description:** CAP 30-70 (-100) mm broad, subviscid, violet or pale lilac, becoming white with a yellow disc. GILLS pale pink lilac. STEM 40-60 x 8-10 mm, equal to marginate base (15-20 mm broad) and then tapering below, pale to medium lilac. KOH reaction pink to red in both fresh and dry cap surface. Immediate vivid pink to red KOH reaction in fresh or dried pileipellis (visible with a hand lens). SPORES amygdaliform to slightly limoniform, 8-10 x 5-6  $\mu\text{m}$ , moderately ornamented, rusty-brown spore print.

**Distinguishing Features:** Characterized by a violet or pale lilac sporocarp with pale pink-lilac gills, a subviscid cap, a rusty-brown spore print, and an immediate pink to red KOH reaction on fresh or dry cap surface. *Cortinarius caesiocyaneus* Britz. is a very similar European species with violaceous gray to ochraceous yellow gills and amygdaliform to slightly limoniform spores which are slightly narrower (8-10 x 4.5-5.5  $\mu\text{m}$ ).

**Distribution:** Endemic to California, Oregon and Washington. Known from seventeen sites within the range of the northern spotted owl: **CALIFORNIA, Siskiyou Co.**, Klamath National Forest, trail to Haypress Meadows; Klamath National Forest, Stanshaw trail; Klamath National Forest, Cub Creek; Klamath National Forest, 1/4 mile up Canyon Creek, trail to Lovers camp; **OREGON, Clackamas Co.**, Rhododendron; Mount Hood National Forest, Twin Bridges campground; Mount Hood National Forest, east fork of the Salmon River; **Hood River Co.**, Mount Hood National Forest, Pioneer Woman's grave; **Lane Co.**, Willamette National Forest, Lamb Butte Scenic Area, Olallie trail; **Wasco Co.**, Mount Hood National Forest, Bear Springs; Warm Springs Indian Reservation, Bear Springs at Beaver Creek; Warm Springs River, Skyline Rd.; **WASHINGTON, Clallam Co.**, Olympic National Park, Deer Creek; Olympic National Park, Elwha campground loop trail; **Skagit Co.**, North Cascades National Park, Easy Pass trailhead; **King Co.**, Stampede Pass; **Lewis Co.**, Rd. 125, 4 miles south of Randle.



**Substrate and habitat:** Sporocarps usually occur in association with the roots of various Pinaceae spp.

**Season:** Fruits from September through November.

**References:** SMITH, A.H. 1939. Studies in the genus *Cortinarius* I. Contrib. Univ. Mich. Herb. 2. University of Michigan Press, Ann Arbor.

**NOTES:**

Photo available only in print version



Photo courtesy of University of Michigan  
Photo courtesy of Dr. T. O'Dell

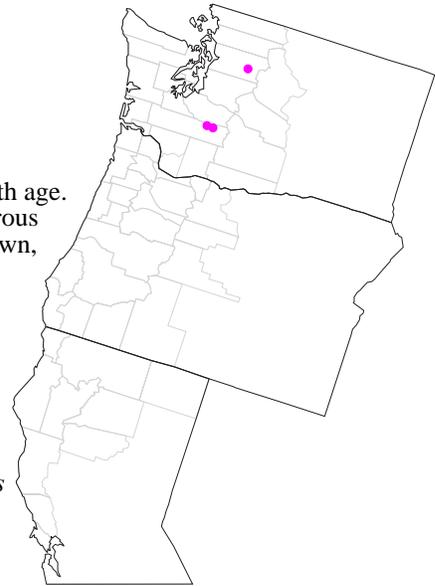
*Cortinarius rainierensis* A.H.Smith & StuntzROD name *Cortinarius rainierensis*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 30-80 mm broad, orange-red, dry, innately fibrillose-squamulose. **ODOR** of radishes. **GILLS** ochraceous red-orange, darkening with age. **STEM** 50-80 (-100) x 10-12 (-15), pale to dark tawny, with fibrillose concolorous to yellow concentric belts. **PILEIPELLIS** with fascicles of rusty- to yellow-brown, moderately encrusted hyphae projecting to form squamules. **SPORES** broadly ovate, 9-11 x 6.5-8  $\mu\text{m}$ , punctate-roughened, dark rusty brown spore print.

**Distinguishing Features:** Characterized by a dry, fibrillose, orange-red, gilled mushroom and a rusty-brown spore print. *Cortinarius speciosissimus* has very similar morphological characters, similar lightly punctate spores (8-11 x 6.5-8.5  $\mu\text{m}$ ). *Cortinarius rubellus* has subglobose and distinctly, densely verrucose spores. *Cortinarius distans* var. *olympianus* has narrower spores (5-6  $\mu\text{m}$ ). Fresh material has an hygrophanous cap with faintly striatulate margins when moist.



**Distribution:** Endemic to Washington. Known from four sites within the range of the northern spotted owl: **WASHINGTON, Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Barlow Pass; **Pierce Co.**, Mount Rainier National Park, Lower Tahoma Creek; Mount Rainier National Park, Kautz Creek; Mount Rainier National Park, Longmire. All of these observations are historic, this taxon has not been collected since 1954.

**Substrate and habitat:** Sporocarps are usually occur in association with the roots of various Pinaceae spp.

**Season:** Fruits from July through October.

**References:** SMITH, A.H., AND D.E. STUNTZ. 1950. New or noteworthy fungi from Mt. Rainier National Park. Mycologia 42:80-134.

**NOTES:**

Photo courtesy of Dr. G. Guldén

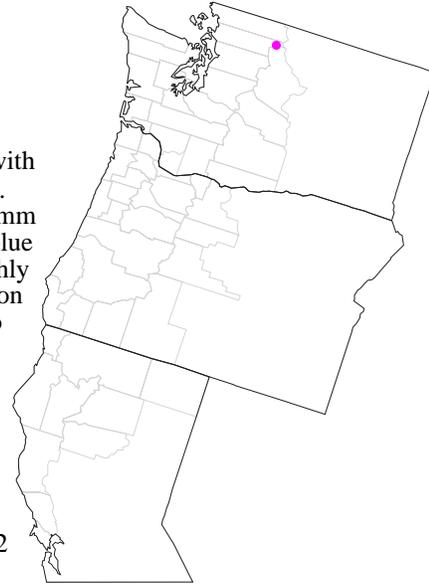
***Cortinarius umidicola* Kauffmann**ROD name *Cortinarius canabarba*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 40-122 mm broad, hemispheric, dry, pale gray-brown with ochraceous to drab disc and violaceous margin, becoming very brown in age. GILLS dull cinnamon drab, then gray- to dark-brown. STEM 60-120 x 10-21 mm (to 17-40 mm at the base), very stout, clavate, apex gray, sometimes with a blue cast. UNIVERSAL VEIL (cortina) gray-white or pale gray brown, fibrillose, highly developed at first and fairly persistent, later remaining as incomplete belt(s) on lower stem. KOH reaction slowly gray-brown on cap surface, dark brown to black in cap flesh. BASIDIA 4-spored, 32-34 x 8-8.5  $\mu\text{m}$ , clavate. CLAMP CONNECTIONS present. SPORES ellipsoid, 8-10 (-10.5) x 5.5-6 (-6.5), verrucose.

**Distinguishing Features:** Characterized by a highly developed gray-white or gray-brown cortina, often with pale brown fibrillose belts on the robust lower stem, and a rusty-brown spore print. The smaller *C. fuscoperonatus* Kühner has a scallier dark-brown cap and larger spores (10-12 x 6.5-8  $\mu\text{m}$ ). *Cortinarius plumiger* Fries has a white veil and a scallier, more strongly hygrophanous cap.



**Distribution:** Also occurs in New York and in Europe. Known from a single site within the range of the northern spotted owl: WASHINGTON, Whatcom Co., Okanogon National Forest, Easy Pass trailhead.

**Substrate and habitat:** Sporocarps usually occur in association with the roots of various Pinaceae spp.

**Season:** Fruits in September.

**References:** KAUFFMAN, C.H. 1905. The genus *Cortinarius*: A preliminary study. Bull. Torr. Bot. Club 32:301-325.

**NOTES:**

Photo courtesy of Dr. T. O'Dell

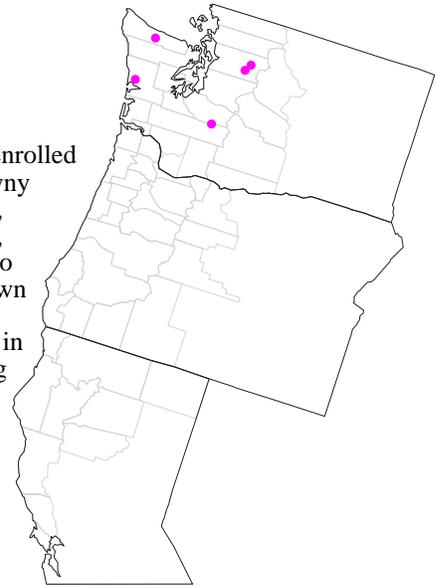
## *Cortinarius variipes* Henry

ROD name *Cortinarius variipes*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 35-72 mm broad, obtuse to broadly umbonate with an enrolled margin, edge becoming rimose in age, moist to dry, brown or ochraceous tawny with darker brown disc. **GILLS** deeply notched, more or less subdistant, gray, becoming yellow-brown to orange-brown. **STEM** 47-73 x 11-15 x 16-21 mm, ventricose, pallid above (with slight gray-lilac tinge) with a pale yellow-tan to orange-tan base. **VEIL** (cortina) scant. **KOH** reaction gray-brown with a brown edge on cap flesh, brown on cap surface. **FLESH** tan to pale tan with slight yellow discoloration. **PILEIPELLIS** bright orange in KOH, suprapellis 4-8  $\mu$ m in diameter, hyphae encrusted with yellow-orange pigments with ends emerging upwards in fascicles, pellis hyphae 8-28  $\mu$ m diameter, slightly gelatinized, inflated and difficult to distinguish from subcuticular hyphae. **CLAMP CONNECTIONS** present in suprapellis. **SPORES** ovoid to subglobose, 6-7 (-8) x 4-5.5  $\mu$ m, punctate to moderately roughened, brown spore print.



**Distinguishing Features:** Characterized by a brown, dry mushroom with gray gills, a pallid stem with tan flesh, a bright orange reaction of the pileipellis to KOH, a swollen base, and a rusty-brown spore print. *Cortinarius intentus* Fries has a white flesh and bright yellow gills.

**Distribution:** Endemic to Washington. Known from five sites within the range of the northern spotted owl: **WASHINGTON, Clallam Co.**, Olympic National Park, Olympic Hot Springs; **Grays Harbor Co.**, Wilderness State Park; **Pierce Co.**, Mount Rainier National Park, Longmire; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, North Fork Sauk River, 2 miles from trailhead; Mount Baker-Snoqualmie National Forest, Barlow Pass.

**Substrate and habitat:** Sporocarps usually occur in association with the roots of various Pinaceae spp.

**Season:** Fruits from August through October.

**References:** HENRY 1977. Bull. Soc. Mycol. France 93:369.

**NOTES:**



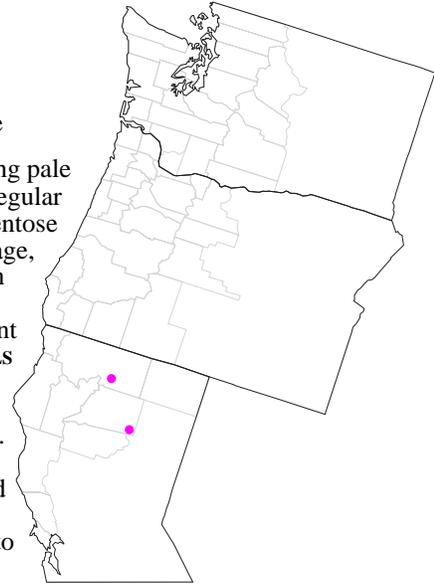
Photo courtesy of Dr. J. Ammirati

***Cortinarius verrucisporus*** Thiers & A.H. SmithROD name *Cortinarius verrucisporus*

Family Cortinariaceae

Morphological Habit sequestrate

**Description:** CAP 3-6 cm broad at maturity, convex when young, becoming pale to plano-convex to plane shallowly depressed with age, frequently highly irregular and undulating in outline, surface dry to moist, innately fibrillose to subtomentose when young, unchanging or becoming glabrous to obscurely fibrillose with age, when very young white to pale brown, very soon becoming rusty brown with some areas colored near yellow to pale brown to brown. **MARGIN** entire, concolorous, strongly incurved, attached to the stipe by a tenacious permanent veil during all stages of development. **ODOR AND TASTE** not distinctive. **GILLS** subdecurrent to adnate, close to subdistant, pallid to pale olive when young becoming red brown as spores mature, thin, becoming noticeably crisped when dry, fragile, several tiers of reduced gills present, somewhat ventricose. **STEM** poorly developed and somewhat obscure, 1-1.5 cm long, 1-1.5 cm broad at the apex, equal to slightly bulbous, concolorous with the cap, covered with partial veil during all stages of development, solid. **PARTIAL VEIL** (cortina) permanent, tough, fibrous, concolorous with cap surface. **FLESH** up to 1 cm thick, yellow, unchanging when exposed, firm. **PELLIOPELLIS** differentiated as a layer of appressed hyphae which stain vinaceous in KOH, walls subgelatinous in KOH. **BASIDIA** 4-spored, hyaline in KOH, clavate, 27-30 x 7-9  $\mu\text{m}$ . **PLEUROCYSTIDIA AND CHEILOCYSTIDIA** absent. **CLAMP CONNECTIONS** present throughout, abundant in the veil tissue. **SPORES** ovoid, 10.5-13 x 6.5-8.0  $\mu\text{m}$ , thick-walled, conspicuously verrucose-roughened with large, coarse warts which often unite to form short reticulations.



**Distinguishing Features:** Characterized by the sequestrate habit, the presence of bright yellow stains on the cap and a strong development of warts on the spores.

**Distribution:** Endemic to California. Known from a single site within the range of the northern spotted owl: CALIFORNIA, Siskiyou Co., Horse Camp. Another site outside the assessment area is in Lassen Volcanic National Park.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Abies magnifica* and possibly other *Abies* spp. above 4,000 ft. elevation.

**Season:** Fruits from June through September.

**References:** THIERS, H., AND SMITH, A.H. 1969. Hypogeous cortinari. Mycologia 61:526-536.

**NOTES:**

Photo available only in print version

Photo courtesy of S. Trudell  
Photo courtesy of S. Trudell

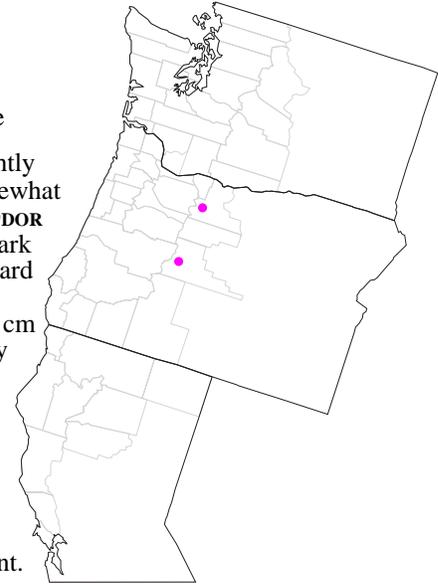
Photo available only in print version

***Cortinarius wiebeae*** Thiers & A.H. SmithROD name *Cortinarius wiebeae*

Family Cortinariaceae

Morphological Habit sequestrate

**Description:** CAP 6-13 cm broadly convex becoming nearly plane to slightly depressed, surface dry and silky, with radiating fibrils, white, becoming somewhat tan colored on handling and on drying. **MARGIN** long remaining enrolled. **ODOR** faintly radish-like. **TASTE** mild. **GILLS** ferruginous when fresh and young, dark rusty brown from spores in age, sinuate, broad (up to 13 mm), narrowed toward both extremities, crowded, numerous tiers of reduced gills present, very thin and very fragile, edges eroded. **STEM** 4-9 cm long, 2.4-4 cm at apex, up to 5 cm thick at base, clavate, white when fresh within and without, solid, surface dry and coated with white fibrils from the copious veil ending in a submembranous annulus. **VEIL** (cortina) persistent, extending from pileus margin to stem, in age shredding radially. **FLESH** white, firm, confluent with stipe, 3 cm thick near stipe. **PILEIPELLIS** lacking a differentiated cutis, hyphae at surface appressed, thin-walled, hyaline, smooth, 3-12  $\mu\text{m}$  in diam, some cells inflated, others 4-9  $\mu\text{m}$  broad and uninflated. **GILL TRAMA** of parallel, hyaline, thin-walled, scarcely inflated hyphae 4-8  $\mu\text{m}$  in diam. **BASIDIA** 4-spored, hyaline in KOH, 17-22 x 5.5-7  $\mu\text{m}$ . **PLEUROCYSTIDIA** absent. **CHEYLOCYSTIDIA** scattered, hyaline, filamentose, 3-4  $\mu\text{m}$  in diam. **CLAMP CONNECTIONS** rare and inconspicuous. **SPORES** ellipsoid, 9-11 x 6-7.5  $\mu\text{m}$ , somewhat asymmetrical, warty-rugulose.



**Distinguishing Features:** Characterized by sequestrate habit, ferruginous gills, small basidia and a heavy veil.

**Distribution:** Endemic to Oregon. Known from one site within the range of the northern spotted owl: **OREGON**, Wasco Co., Mount Hood National Forest, Camas Prairie. Another site is known from near Mount Bachelor on the Deschutes National Forest.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Pseudotsuga menziesii* and *Pinus ponderosa* above 3,500 ft. elevation.

**Season:** Fruits in June.

**References:** THIERS, H., AND SMITH, A.H. 1969. Hypogeous cortinariii. Mycologia 61:526-536.

**NOTES:**

No Photograph Available

***Dermocybe humboldtensis*** (Ammirati & A.H. Smith) AmmiratiROD name *Dermocybe humboldtensis*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 30-50 mm broad, appressed fibrillose with an olive-yellow sheen when young, disc pale brown, margin pale yellow-tan. **ODOR AND TASTE** indistinct. **GILLS** adnate, close, olive-yellow at first, then more or less ochre-yellow. **STEM** 60-120 x 4-8 mm,  $\pm$ equal, fibrillose, dingy yellow to the base with a covering of brown fibrils. Cap surface dark inky violet, becoming slowly purple-brown in KOH. **FLESH** dingy-brown. **PILEIPELLIS** brown-red with blue to blue-purple pigment particles in the cuticular and subcuticular hyphae when mounted in KOH. **CHEILOCYSTIDIA** narrowly cylindrical,  $\pm 2 \mu\text{m}$  in diameter, some with yellow contents with red granules. **CLAMP CONNECTIONS** present. **SPORES** ellipsoid to ovate, 7-9.2 x 4.5-5.5  $\mu\text{m}$ , pale brown to fulvous in KOH, verruculose.

**Distinguishing Features:** Characterized by a green-brown cap with an olive-yellow sheen, olive-yellow gills, dingy yellow stem, and rusty-brown spore print. *Dermocybe idahoensis* has rusty- to orange-ochraceous gills, slightly larger spores (but range overlapping that of *D. humboldtensis*) and clavate to broadly clavate cheilocystidia.

**Distribution:** Endemic to California and Oregon. Known from three sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Lamphere Dunes; Trinidad; **OREGON**, Douglas Co., Irwin Rocks Research Natural Area.

**Substrate and habitat:** Sporocarps usually occur in association with the roots of various Pinaceae spp.

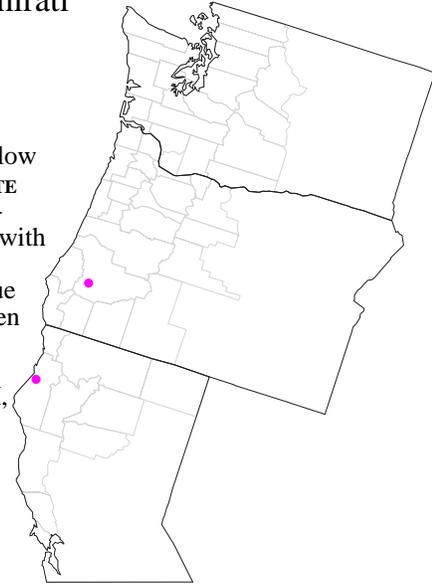
**Season:** Fruits in November and December.

**References:** AMMIRATI, J.F., AND SMITH, A.H. 1977, Studies in the genus *Cortinarius*, III: section *Dermocybe*, a new North American species. Mycotaxon 5:381-397.

**NOTES:**



Photo courtesy of Dr. M.A. Castellano



*Destuntzia fusca* Fogel & TrappeROD name *Destuntzia fusca*

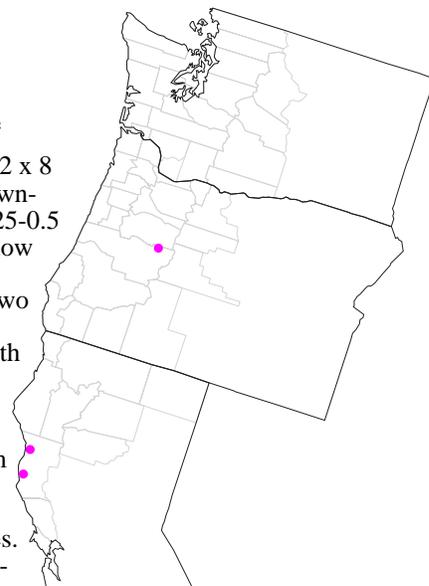
Family Cortinariaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** pulvinate, up to 12-15 mm broad when fresh, 12 x 8 mm as dried, glabrous, pallid, in time becoming pale brown-rose, drying brown-orange. **GLEBA** as dried composed of brown-black, elongate locules 0.7 x 0.25-0.5 mm in diam, filled with gel-embedded spores, separated by white to dull yellow veins. **COLUMELLA** a pulvinate base up to 3 x 5 mm with irregular branches.

**RHIZOMORPHS** lacking. **ODOR** not distinctive. **PERIDIUM** 440-519  $\mu\text{m}$  thick, two layered. **PERIDIAL EPICUTIS** 198-250  $\mu\text{m}$  thick, of periclinal, hyaline, thin-walled hyphae 3-4  $\mu\text{m}$  broad, cells not becoming inflated. One sporocarp with hyaline, thick-walled hyphae 5-10  $\mu\text{m}$  in diam, attached to thick-walled, terminal, subglobose vesicles 50 x 40  $\mu\text{m}$  in diam, subtending hyphae constricted at point of attachment to vesicle. **PERIDIAL SUBCUTIS** 190-231  $\mu\text{m}$  thick, confluent with trama, of periclinal, hyaline, thin-walled hyphae 3-4  $\mu\text{m}$  broad at septa, cells becoming inflated to 8  $\mu\text{m}$ . **TRAMA** 25-75  $\mu\text{m}$  wide, of interwoven, hyaline, thin-walled, gelatinous, septate hyphae 3-4 in diam, cells inflated to 12  $\mu\text{m}$  in diam, sphaerocysts common in axes of tramal plates.

**CLAMP CONNECTIONS** present. **BASIDIA** reviving poorly, 4-spored, obovate, 40-50 x 8-11  $\mu\text{m}$ , hyaline, thin-walled, no clamp connection observed at basal septum, sterigmata tubular, 2-4 x 1.5-2  $\mu\text{m}$ . **BASIDIOLES** not rehydrating. **SPORES** ellipsoid, 8-11 x 5-6  $\mu\text{m}$  including ornamentation but not pedicel, dark gray-yellow in KOH, ornamentation warty-rugulose, 0.5  $\mu\text{m}$  or less long, thin-walled, pedicel central, tubular, hyaline, 1-4 x 1.5  $\mu\text{m}$  broad.



**Distinguishing Features:** Characterized by short spore ornamentation, presence of sphaerocysts in the tramal plates, and a dark brown to black gleba.

**Distribution:** Endemic to California and Oregon. Known from three sites within the range of the northern spotted owl: **CALIFORNIA**, Mendocino Co., 8 miles west of Leggett, along highway 1; Van Damme State Park; **OREGON**, Lane Co., Willamette National Forest, H.J. Andrews Experimental Forest, stand 3.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Lithocarpus densiflorus*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* below 3,000 ft. elevation.

**Season:** Fruits in October and December.

**References:** FOGEL, R., AND TRAPPE, J.M. 1985. *Destuntzia*, a new genus in the Hymenogastraceae (Basidiomycotina). Mycologia 77:732-742.

**NOTES:**

No Photograph Available

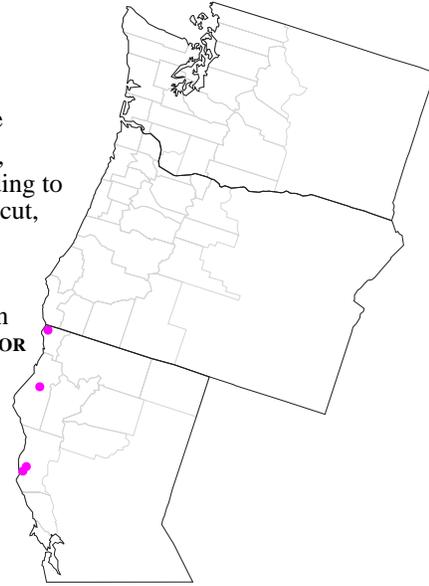
***Destuntzia rubra* (Harkness) Fogel & Trappe**ROD name *Destuntzia rubra*

Family Cortinariaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** reniform to subglobose, up to 20-25 mm broad, pubescent, with adherent soil, white at first, becoming deep pink above, grading to white below at maturity, slowly staining blue-pink when bruised, pink when cut, drying red. **GLEBA** composed of dark gray-yellow to olive-brown, spherical locules ca. 0.2 mm broad, filled with gel-embedded spores at maturity.

**COLUMELLA** absent or a pulvinate base up to 6 x 3 mm with a few radiating branches. **RHIZOMORPHS** basal, concolorous with peridium. **KOH**, dark brown on epicutis, yellow-brown on subcutis;  $\text{FeSO}_4$  negative; **ETOH** deep red. **ODOR** strong, fishy. **PERIDIUM** 875-1500  $\mu\text{m}$  thick, two-layered. **PERIDIAL EPICUTIS** 250-470  $\mu\text{m}$  thick, of tightly interwoven, hyaline, thin-walled hyphae 2-4 (-5)  $\mu\text{m}$  broad. **PERIDIAL SUBCUTIS** 625-1030  $\mu\text{m}$  thick, confluent with trama, of tightly interwoven, hyaline, thin-walled hyphae 3-4  $\mu\text{m}$  broad at septa, inflated to 10  $\mu\text{m}$  in diam. A band of interwoven, irregular, aseptate, thick-walled (1-2  $\mu\text{m}$ ) hyphae 4-12 (-18)  $\mu\text{m}$  broad occurs at the junction of the epicutis and subcutis. Associated with the thick-walled hyphae are hyaline, thick-walled (2  $\mu\text{m}$ ), subglobose to ellipsoid cells 29-54 x 22-48  $\mu\text{m}$  which arise from the thin-walled hyphae. **TRAMA** 35-50  $\mu\text{m}$  wide, of subparallel, hyaline, thin-walled, gelatinous, refractive hyphae 2-4  $\mu\text{m}$  in diam, cells inflated to 8  $\mu\text{m}$  in diam, clamp connections rare, occasional large (9  $\mu\text{m}$  broad) hyphae present. **BASIDIA** cylindrical to clavate, 40-50 x 4-8  $\mu\text{m}$ , hyaline, walls thickened slightly, single-spored, projecting into locules, not forming a euhymenium. **BASIDIOLES** clavate, 40-50 x 8-10  $\mu\text{m}$ , hyaline, walls thickened slightly. **CLAMP CONNECTIONS** common. **SPORES** subglobose to ellipsoid, 8-11 x 7-9  $\mu\text{m}$  including ornamentation but not pedicel, pale olive in **KOH**, immature spores hyaline, cyanophilic; ornamented with conical, vertically striate warts 0.5-2 x  $\pm$ 1.5  $\mu\text{m}$  broad, thin-walled, base truncate, pedicel of immature spores 2-3 x 2  $\mu\text{m}$ .



**Distinguishing Features:** Characterized by monosporous basidia, a thick peridium, and the prominent, striate, conical warts ornamenting the spores.

**Distribution:** Endemic to California. Known from 4 sites within the range of the northern spotted owl: **CALIFORNIA, Del Norte Co.**, 2 miles south of Smith River; **Humboldt Co.**, junction of Maple Creek rd. and Simpson rd. 4800; **Mendocino Co.**, Jackson State Forest, Woodlands camp on hill above mess hall; near Albion bridge at junction of rd. 409 and rd. 408.

**Substrate & Habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Abies grandis*, *Arbutus menziesii*, *Lithocarpus densiflorus*, *Pseudotsuga menziesii*, and *Sequoia sempervirens* below 2,000 ft. elevation.

**Season:** Fruits in March, April, June, July, October and December.

**References:** FOGEL, R., AND TRAPPE, J.M. 1985. *Destuntzia*, a new genus in the Hymenogastraceae (Basidiomycotina). *Mycologia* 77:732-742.

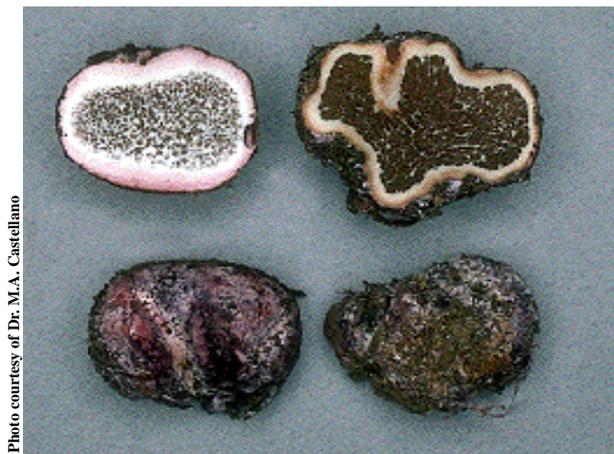
**NOTES:**

Photo courtesy of Dr. M.A. Castellano

***Dichostereum boreale*** (Pouzar) Ginns & LefebvreROD name *Dichostereum granulosum*

Family Dichostereaceae

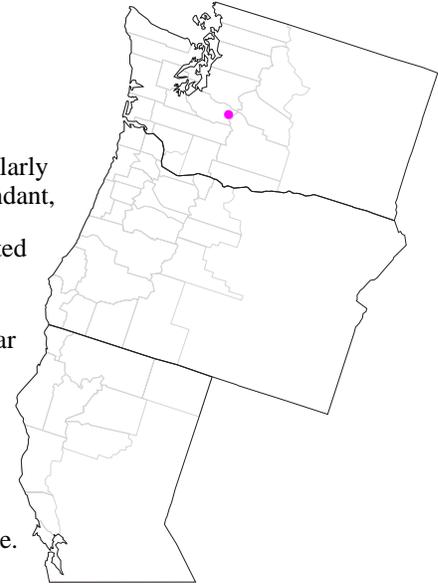
Morphological Habit resupinate

**Description:** SPOROCARPS resupinate, with a slightly tuberculate or irregularly warty hymenial surface, creamy-ochre in the herbarium. DICHOPHYSES abundant, strongly dextrinoid, up to 5 µm in diam. GLOEOCYSTIDIA present, filled with granular material. SPORES ellipsoid, 4-6 x 3-4 µm, amyloid, subtly ornamented with small warts and ridges.

**Distinguishing Features:** Characterized by an ochraceous-buff granular resupinate crust on dead wood and a white spore print. *Dichostereum pallescens* has more highly ornamented, larger spores (6-7.5 x 5.5-6.5 µm), narrower dichophyses (up to 2 µm in diam), and lacks gloeocystidia. *Dichostereum effuscatum* has larger spores (6-8 x 5.5-7 µm), smaller dichophyses, and appears restricted to eastern North America.

**Distribution:** Also occurs across the northern United States and in Europe. Known from a single site within the range of the northern spotted owl:

WASHINGTON, Pierce Co., Silver Springs Forest Camp. Other collections with vague locality data potentially extend the range to Washington, Snohomish Co., and Tillamook Co., OREGON.



**Substrate and habitat:** Forms resupinate sporocarps and is saprophytic on dead coniferous wood; associated with white-rot of fallen trees.

**Season:** Fruits in May, July, and October.

**References:** GINNS, J., AND M.N.L. LEFEBVRE. 1993 Lignicolous Corticioid Fungi of North America, Mycol. Mem. 19. APS Press, St. Paul. JÜLICH, W., AND J.A. STALPERS. 1980. The Resupinate Non-Poroid Aphylophorales of the Temperate Northern Hemisphere. North-Holland Publishing Company, Amsterdam, Oxford, NY.

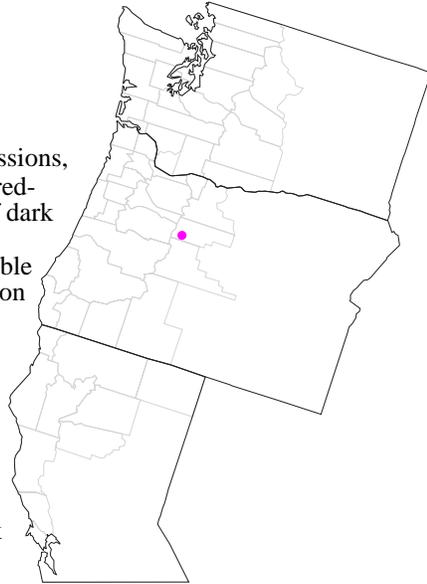
**NOTES:**

No Photograph Available

*Elaphomyces anthracinus* VittadiniROD name *Elaphomyces anthracinus*

Family Elaphomycetaceae      Morphological Habit sequestrate

**Description:** **SPOROCARPS** 2-3 cm broad, slightly flattened with low depressions, covered by dark, firm earthy crust of blackened mycorrhiza and scanty dark red-brown mycelium. **CORTEX** on mature specimens almost black with a flush of dark brown, obscurely and finely warty, in most specimens with one large smooth well delimited spot with green discoloring mycelium, brittle and hard, separable from peridium. **PERIDIUM** 1.5-2 mm thick, pale silver-gray when fresh but soon turning slate gray, soft. **GLEBA** pulverulent at maturity, black with a distinct olivaceous sheen. **ODOR** not distinctive. **CORTEX** 250-350  $\mu\text{m}$  thick with broad flat warts, protruding part 100  $\mu\text{m}$  high, 200  $\mu\text{m}$  broad, made up of pseudoparenchymatic tissue, dark brown, walls 1-2  $\mu\text{m}$  thick, subparallel hyphae between warts 4-5  $\mu\text{m}$  broad and but slightly paler brown. **PERIDIUM** well distinguished from cortex, hyphae pale brown, hyaline, thick-walled, 3-4  $\mu\text{m}$  broad in outer part, more loosely woven and 6-7  $\mu\text{m}$  broad within. **ASCI** not seen. **CAPILLITIUM** scanty, of 2  $\mu\text{m}$  in diam, hyaline hyphae encrusted with olivaceous pigment. **SPORES** globose, 21-25  $\mu\text{m}$  in diam, dark brown to almost black, densely set with crowded, low spines.



**Distinguishing Features:** Characterized by a finely warty, nearly black peridium and spores that are almost black with crowded, low spines.

**Distribution:** Also known from Idaho and Europe. Known from a single site within the range of the northern spotted owl: **OREGON, Jefferson Co.**, Deschutes National Forest, Riverside campground.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of assorted Fagaceae in Europe and with *Pinus ponderosa* in Oregon.

**Season:** Fruits in May and August.

**References:** VITTADINI, C. 1831. Monographia Tuberacearum. Mediolani, Italy p. 66.

**NOTES:**



Photo courtesy of Dr. M.A. Castellano

## *Elaphomyces subviscidus* (Zeller) Trappe & Guzmán

ROD name *Elaphomyces subviscidus*

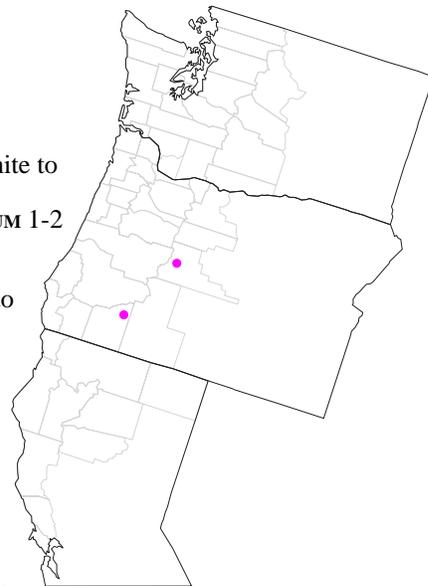
Family Elaphomycetaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** subglobose, up to 3 x 5 cm, surface smooth, white to gray, drying yellow, nonreactive with KOH, encrusted with soil held by inconspicuous but abundant pale hyphae emerging from the surface. **PERIDIUM** 1-2 mm thick when dry, reviving to a thickness of 2.5-3 mm, with a thin, yellow outer layer and a thick, pallid inner layer. **GLEBA** dark brown, powdery.

**PERIDIAL PERIDIAL EPICUTIS**  $\pm 150 \mu\text{m}$ , of yellow, densely interwoven, single to fascicled hyphae 3-5  $\mu\text{m}$  broad, with mostly hyaline, thin walls but in places thickened to 0.5  $\mu\text{m}$  and often yellow, the entire stratum obscured by hyaline to yellow, amorphous debris, overlain with emergent superficial hyphae that are sinuous, hyaline, thin-walled, 2.5-4  $\mu\text{m}$  in diam. **PERIDIAL SUBCUTIS**  $\pm 2,500 \mu\text{m}$  thick, abruptly differentiated from the outer layer as more or less circumferentially aligned but interwoven fascicles of a few to nearly 100 hyaline, highly refractive hyphae 4-8  $\mu\text{m}$  in diam with the walls mucilaginous-thickened, yellow, amorphous debris scattered throughout.

**GLEBAL** hyphae dispersed among spores, thin-walled, hyaline to pale yellow-brown, mostly 1.5-3  $\mu\text{m}$  in diam but a few 5-6  $\mu\text{m}$ , dark brown, amorphous deposits scattered throughout between hyphae. **ASCI** not seen. **SPORES** globose, 12-21  $\mu\text{m}$  in diam excluding ornamentation, 14-23 (-24)  $\mu\text{m}$  with ornamentation, the smaller spores very dark brown, the larger tending to be pale brown, larger spores thin-walled, smaller ones with walls up to 0.5  $\mu\text{m}$  thick, ornamentation of crowded spines 1-2  $\mu\text{m}$  long and  $\pm 0.2 \mu\text{m}$  thick, separated by 0.2-0.5  $\mu\text{m}$  or sometimes joined in two's and three's by ridges but never a partial reticulum, embedded in an inconspicuous, mucilaginous matrix.



**Distinguishing Features:** Characterized by the smooth surfaced, noncarbonaceous, pale peridium, brown spore mass, and relatively large spores.

**Distribution:** Also known from Idaho. Known from two sites within the range of the northern spotted owl: **OREGON**, **Deschutes** Co., Deschutes National Forest, Three Creeks Lake; **Jackson** Co., near Prospect. The site near Prospect is indeterminable for locality and ownership. Not known from California or Washington.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Pinus contorta* and *Tsuga mertensiana* at high elevation (6,800 ft.).

**Season:** Fruits in June and August.

**References:** TRAPPE, J.M., AND G. GUZMÁN. 1971. A newly determined species of *Elaphomyces* from Oregon. *Madroño* 21:128-130.

**NOTES:**



Photo courtesy of Dr. M.A. Castellano

***Endogone acrogena*** GerdemannROD name *Endogone acrogena***Family** Endogonaceae**Morphological Habit** sequestrate

**Description:** **SPOROCARPS** up to 4 x 7 x 10 mm, greatly lobed, convoluted and irregular, formed from folded tissue up to 2 mm in thickness, bright yellow when fresh, light tan-yellow when dry. **PERIDIUM** absent. In developing sporocarps, tufts of glebal hyphae radiate from the surface, becoming matted over the surface by maturity. **GLEBA** developing acrogenously from a sterile or nearly sterile base of interwoven hyphae as radiate hyphae intermingled with radiate rows of zygospores that are often tightly appressed in chains, the oldest spores at the base, the youngest at the actively growing surface. **GAMETANGIA** 15 x 7  $\mu\text{m}$ , thin-walled and ephemeral, equal in size, parallel, uniting at their tips, with the zygospor forming above the point of union. **SPORES** variable in size and shape, 15 x 30-80 x 59  $\mu\text{m}$ , mature spores within a chain varying from a small to large, globose, ellipsoid, ovate or irregular, becoming flattened and angular from pressure, wall up to 5  $\mu\text{m}$  thick, of two variable layers.

**Distinguishing Features:** Characterized by its apparent acrogenous development of the sporocarps that actually develop on ephemeral gametangia that are not visible on mature spores.

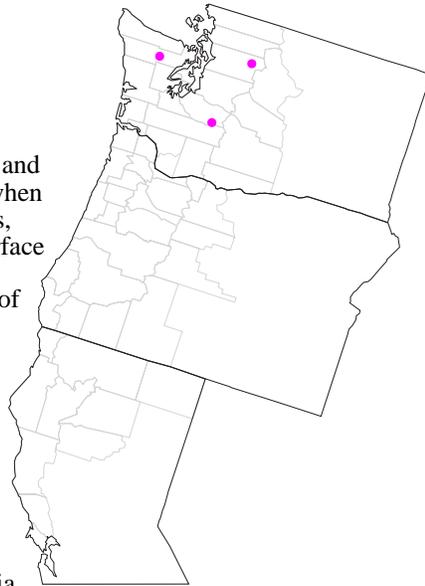
**Distribution:** Endemic to Washington. Known from three sites within the range of the northern spotted owl: **WASHINGTON, Jefferson Co.**, Olympic National Park; **Pierce Co.**, Mount Rainier National Park, Paradise Point; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, White Chuck Rd.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Abies lasiocarpa*.

**Season:** Fruits in September and October.

**References:** GERDEMANN, J.W., AND J.M. TRAPPE. 1974. The Endogonaceae in the Pacific Northwest. Mycol. Mem. 5:1-76.

**NOTES:**



**No Photograph Available**

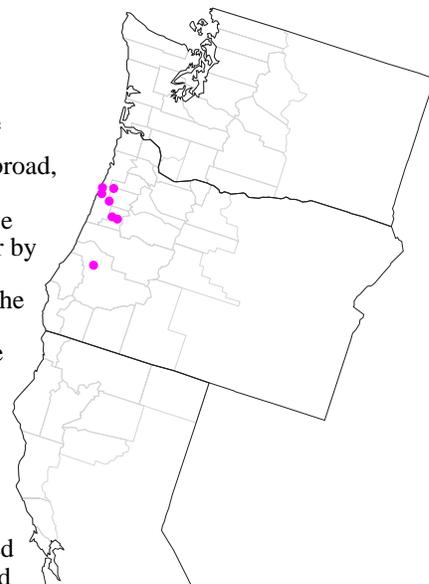
## *Endogone oregonensis* Gerdemann & Trappe

**ROD name** *Endogone oregonensis*

**Family** Endogonaceae

**Morphological Habit** sequestrate

**Description:** Sporocarps globose, ellipsoid, lobed or irregular, 6-20 mm broad, enclosed in a thin, white, cottony peridium with much adhering soil. **GLEBA** exuding white latex when cut, containing pallid to pale sordid yellow, globose clusters of spores up to 2 mm broad, spore clusters separated from each other by bands of soil or white hyphae. **GAMETANGIA** ephemeral, observed only on immature spores, equal or subequal in size, uniting at or near their tips with the zygospore budding from near the point of union or from one of the two gametangia. **SPORES** globose to ellipsoid or ovoid, 77-150 x 44-120  $\mu\text{m}$ , pale yellow, spore wall 5-7  $\mu\text{m}$  thick, composed of two layers, the outer wall hyaline to pale yellow and generally slightly thicker than the hyaline inner wall, spores not enclosed in a hyphal mantle, separated from each other by thin-walled, vesicular hyphae which are often crushed between the thickly crowded spores.



**Distinguishing Features:** Characterized by sporocarps that are enclosed in a peridium, individual zygospores that are not enclosed in an envelope, and hyphae that are vesicular, thin-walled, and often crushed between the spores.

**Distribution:** Endemic to Oregon. Known from eight sites within the range of the northern spotted owl: **OREGON, Benton Co.**, McDonald Forest; near Blodgett; **Douglas Co.**, Bureau of Land Management, Roseburg District, Blue Ridge, near Old Blue lookout tower; **Lincoln Co.**, Siuslaw National Forest, Cascade Head Experimental Forest, Green Point; **Polk Co.**, Valsetz Lake; Valsetz Lake; Van Duzer Corridor; **Tillamook Co.**, Siuslaw National Forest, Cascade Head Experimental Forest.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* below 1,000 ft. elevation.

**Season:** Fruits in February, July, September, and November.

**References:** GERDEMANN, J.W., AND J.M. TRAPPE. 1974. The Endogonaceae in the Pacific Northwest. Mycol. Mem. 5:1-76.

**NOTES:**



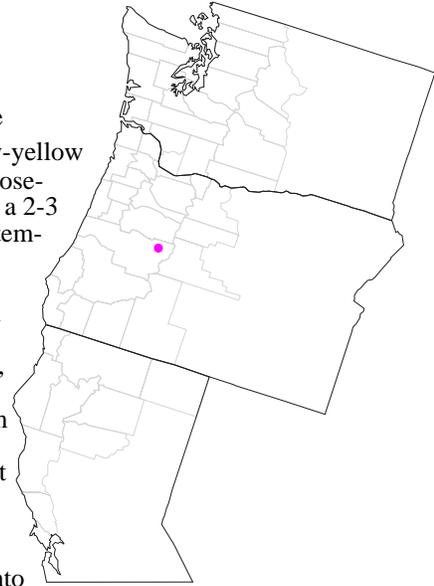
Photo courtesy of Dr. J.M. Trappe

***Gastroboletus imbellus*** TrappeROD name *Gastroboletus imbellus*

Family Boletaceae

Morphological Habit sequestrate

**Description:** CAP 50 mm broad, convex. PERIDIUM moist not viscid, gray-yellow overlain by dark olivaceous fibrils, ruptured by a few broad cracks, context rose-blushed where exposed. MARGIN raggedly membranous-appendiculate from a 2-3 mm broad extension of the peridium. FLESH 20 mm thick at attachment of stem-columella, soft, white with scattered pale yellow stained areas, a rosy zone above the gleba and a 2 mm thick olive-hygrophanous zone under the cap surface, slowly and erratically staining pale brown where cut. KOH on flesh quickly turns deep lilac adjacent to the peridium. GLEBA exposed, tubulose, the tubes decurrent, readily separable from context, less than 2 mm in length, pale gray-olive. TUBE MOUTHS rotund, 0.25-1 mm broad, mostly blocked by folds and outgrowths of wall tissue. TUBES oriented at about 40 degrees from vertical. KOH on tube mouths turns dark brown, tube bases deep lilac. STIPE-COLUMELLA 30 mm long, 15 mm thick at apex, equal except for a slight attenuation at the base, laterally attached to pileus; apical surface dry, pale yellow, the color grading to sordid creamy in the mid-portion to pale salmonaceous with copious dark brown stains at base; upper half with dark brown to black glandular dots which are minute singly but often coalesced into patches up to one-half mm broad; flesh pallid with a vinaceous blush near base, slowly sordid when cut. ODOR pungent-farinaceous. TASTE slightly bitter. PERIDIAL EPICUTIS of granulated, pale brown, thin-walled hyphae 3-6  $\mu$ m broad. PERIDIAL SUBCUTIS similar except that hyphae are 5-12  $\mu$ m broad and yellow to pale vinaceous debris is present. In Melzer's reagent epicuticular hyphae are yellow and subcuticular hyphae more or less vinaceous stained, orange-brown pigment balls scattered throughout. FLESH of interwoven, hyaline, thin-walled hyphae 5-20  $\mu$ m broad, with sparsely scattered vinaceous debris, in Melzer's reagent, the hyphae yellow but obscured by abundant, orange-brown pigment balls. Hyphae of stem-columella similar to those of peridial context but more or less parallel; GLANDULAR DOTS are palisades of dark brown, much encrusted elements 5-9  $\mu$ m broad, including scattered fertile basidia. Subglebal tissue bright lilac in KOH when fresh and diffusing a lilac pigment into the mounting medium, merely vinaceous when revived in KOH; in Melzer's reagent deep yellow with many brown, amorphous deposits, hyphae thin-walled, 3-8  $\mu$ m broad, oleiferous hyphae present. TRAMA OF TUBES parallel, hyaline, thin-walled hyphae 4-14  $\mu$ m broad, oleiferous hyphae few. BASIDIA 3-5 (7) x 20-30  $\mu$ m, thin walled, hyaline and guttulate in KOH, sterigmata inconspicuous. CYSTIDIA fascicled, 4-6 x 25-60  $\mu$ m, hyaline to vinaceous to dark brown in KOH with much brown, amorphous material deposited at the base of the clusters, cylindrical to fusoid-ventricose or irregularly constricted. CLAMP CONNECTIONS absent. SPORES narrowly to broadly ellipsoid to obovate, 2.5 x 7-10  $\mu$ m, thin-walled, smooth, asymmetrical, hyaline in KOH, inamyloid.



**Distinguishing Features:** Characterized by its drab coloration, persistently membranous-appendiculate margin, rather unpleasant taste and loculate gleba with very short tubes.

**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Lane Co., Willamette National Forest, at crest of Olallie trail.

**Substrate and habitat:** forms sporocarps beneath the soil surface associated with the roots of *Abies grandis*, *A. lasiocarpa*, *Tsuga mertensiana*, with an understory of *Antennaria lanata*, *Fragaria* sp., *Pachistima myrsinites*, *Sorbus sitchensis*, and *Vaccinium* sp. at 5,000 ft. elevation.

**Season:** Fruits in October.

**References:** THIERS, H.D., AND TRAPPE, J.M. 1969. Studies in the genus *Gastroboletus*. Brittonia 21:249-251.

**NOTES:**

No Photograph Available

## *Gastroboletus ruber* (Zeller) Cázares & Trappe

ROD name *Gastroboletus ruber*

Family Boletaceae

Morphological Habit sequestrate

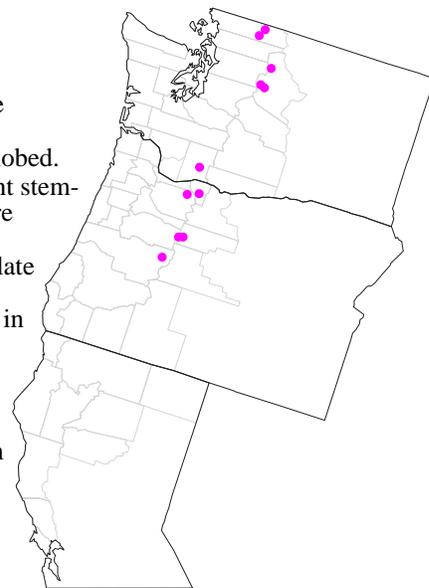
**Description:** **SPOROCARPS** 20-40 x 20-55 mm, subglobose to turbinate or lobed.

**PERIDIUM** rose to brown-red or red-brown and persistent on apex of percurrent stem-columella, dingy pale yellow to dark red-brown and usually evanescent where covering tube mouths but sometimes partially persisting and then becoming yellow-brown to cinnamon and depressed in the tube mouths to give a reticulate appearance. **GLEBA** pale yellow in youth, dark olive at maturity, initially of

separable tubes 0.5-1 mm in diam divided into labyrinthine locules  $\pm 0.2$  mm in diam. **TUBE MOUTHS** tinged red-orange to red at maturity, turning blue where bruised or cut, separable from the columella. **STEM-COLUMELLA** pale yellow with a concolorous context, turning blue instantly where cut, columnar to dendroid, percurrent or not, with many branches reaching or nearly reaching the peridium, projecting as much as 1 cm below the glebal base, up to 1.5 cm broad at the apex when percurrent. **ODOR** not distinctive. **BASAL HYPHAE**

white to pale yellow. **STEM-COLUMELLA** of thin-walled, hyaline, branched hyphae, 3-12 (-15)  $\mu\text{m}$  in diam, laticiferous hyphae scattered near the peridium. **PERIDIAL EPICUTIS** initially differentiated as a palisade of cylindrical to clavate dermatocystidia 15-30 (-70) x 3-10  $\mu\text{m}$ , hyaline to pale yellow in KOH, becoming a disrupted turf over the gleba as the sporocarp expands but remaining a palisade over the percurrent

columellar apices, in age the contents turning yellow to brown. **TRAMA** 25-170  $\mu\text{m}$  thick, of hyaline, thin-walled, subparallel to interwoven hyphae 2-12  $\mu\text{m}$  in diam, laticiferous hyphae occasional. **SUBHYMENIUM** cellular, 2-3 cells deep, cells 3-10  $\mu\text{m}$  in diam. **BASIDIA** 26-40 x 7-11  $\mu\text{m}$ , thin-walled, cylindrical to clavate, hyaline, 2- to 4- spored, sterigmata 4-5  $\mu\text{m}$  long. **CYSTIDIA** 25-50 x 4-14  $\mu\text{m}$ , scattered, thin-walled, fusoid-ventricose, hyaline to pale olive in KOH, lacking encrustation. **CLAMP CONNECTIONS** absent. **SPORES** subfusiform, (8-) 9-15 (-20) x 4-6  $\mu\text{m}$ , smooth, asymmetric, walls up to 0.5  $\mu\text{m}$  thick, pale green to olive in KOH, inamyloid.



**Distinguishing Features:** Characterized by a much reduced stem, coloration of the peridium, and large spores.

**Distribution:** Endemic to Oregon and Washington. Known from thirteen sites within the range of the northern spotted owl: **OREGON**, Clackamas Co., Mount Hood National Forest, McNeil Point trail; **Hood River Co.**, Mount Hood National Forest, Tillie Jane campground; **Jefferson Co.**, Mount Jefferson Wilderness Area, 0.5 miles south of Cabot Lake; Mount Jefferson Wilderness Area, east end of Cabot Lake; Mount Jefferson Wilderness Area, Mount Shirley Lake; **Lane Co.**, Willamette National Forest, English Mountain; **WASHINGTON**, **Chelan Co.**, Wenatchee National Forest, Snowy Creek trail; Wenatchee National Forest, Lake Valhalla trail; Glacier Peak Wilderness, Lyman Lake campground; **Skamania Co.**, Gifford Pinchot National Forest, Tombstone Lake; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, 4 miles north of Copper Lake; Mount Baker-Snoqualmie National Forest, Upper Chilliwack River; Mount Baker-Snoqualmie National Forest, Hannegan Pass.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of assorted Pinaceae above 4,000 ft. in elevation, particularly *Abies amabilis*, *Abies procera*, *Pinus monticola*, or *Tsuga mertensiana*.

**Season:** Fruits from August through September.

**References:** THIERS, H.D., AND TRAPPE, J.M. 1969. Studies in the genus *Gastroboletus*. Brittonia 21:249-251.

### NOTES:



Photo courtesy of Dr. T. O'Bell

Photo courtesy of Dr. J.M. Trappe

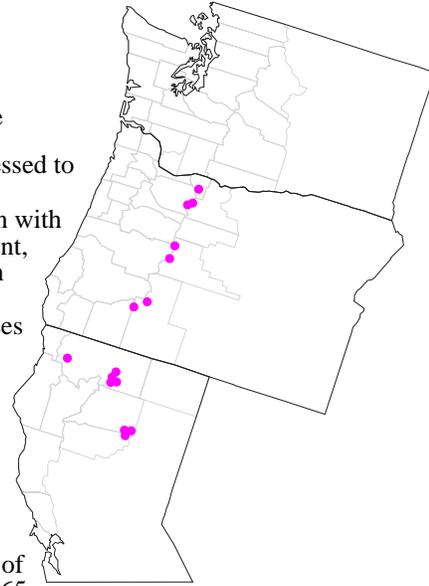


*Gastroboletus subalpinus* Trappe & ThiersROD name *Gastroboletus subalpinus*

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 60-100 mm broad, convex, plane, deeply depressed to plano-convex. **PERIDIAL UPPER SURFACE** dry to moist, glabrous, velutinous to subtomentose, pale buff to pale olive buff, unchanging or darkening to brown with age; peridium on lateral and undersides of gleba white, thin, velvety, persistent, peridial flesh in some sporocarps slowly staining pink to gray-lavender when cut. **GLEBA** tubulose, 10-30 mm long, in youth gray-yellow, dark olive buff, becoming olive-brown. **TUBES** oriented mostly curved and oriented 20 degrees from vertical to horizontal or angled upwards near edges of the sporocarp. **TUBE MOUTHS** small, less than 1 mm broad, concolorous with tubes, unchanging when bruised. **STEM-COLUMELLA** 20-50 mm long, 20-45 mm thick at apex, subventricose or tapering downward. **FLESH** white, unchanging. **ODOR** mild to farinaceous. **TASTE** mild, pleasant. **PERIDIAL EPICUTIS** covered with densely interwoven, much branched hyphae 4-15  $\mu$ m broad, with erect, tapered, blunt-tipped terminal cells 7-12 x 25-45  $\mu$ m. In KOH all hyphae hyaline, in Melzer's reagent hyphae pallid to pale yellow to bright red-brown. Peridial epicutis a trichodermium that collapses with age, of blunt-tipped, cylindrical to tapered to occasionally subcapitate cells 8-12 x 27-65  $\mu$ m, subtrichodermial hyphae interwoven, 4-10  $\mu$ m broad, hyaline except for localized pale golden brown areas, oleiferous hyphae abundant. Flesh of upper peridium of thin-walled, often inflated, loosely interwoven hyphae (3) 8-25  $\mu$ m broad. Hyaline, oleiferous hyphae 12-20  $\mu$ m broad and with walls thickened to 1  $\mu$ m scattered throughout. **STEM-COLUMELLA FLESH** a palisade of hyaline, clavate cells 6-15 x 22-35  $\mu$ m, with occasional fertile basidia, collapsing in age and then present only at remnant patches overlaid by hyaline, subparallel to interwoven hyphae 4-15  $\mu$ m broad. Oleiferous hyphae abundant. **TRAMA OF TUBES** 60-80  $\mu$ m wide, consisting of hyaline, parallel hyphae 4-6 (8)  $\mu$ m broad, not divergent. **SUBHYMENTUM** similar to trama but with inflated cells 5-15  $\mu$ m broad scattered throughout. **BASIDIA** 4-spored, 8-13 x 40-48  $\mu$ m, thin-walled, hyaline, clavate, sterigmata 3-4  $\mu$ m long. **BRACHYBASIDIOLES** 7-12 x 25-40  $\mu$ m, similar in shape to basidia. **CYSTIDIA** hyaline, thin-walled, subcylindric to clavate to tapered, 7-10 x 24-75  $\mu$ m. **CLAMP CONNECTIONS** absent. **SPORES** ellipsoid, oblong to subovate, occasionally allantoid, 4.5-6 (8) x 10-16 (18)  $\mu$ m, smooth, asymmetrical, pale yellow to ochraceous in KOH, moderately thick-walled.



**Distinguishing Features:** Characterized by its smooth, generally white to pallid peridium and stem.

**Distribution:** Endemic to California and Oregon. Known from eighteen sites within the range of the northern spotted owl: **CALIFORNIA**, **Siskiyou Co.**, Shasta-Trinity National Forest, Panther Meadow; Shasta-Trinity National Forest, Panther Creek area, Shasta-Trinity National Forest, Horse camp, Shasta-Trinity National Forest, Bear Springs; Shasta-Trinity National Forest, Marble Mountain Wilderness Area, Haypress trail; **OREGON**, **Clackamas Co.**, Mount Hood National Forest, Timothy Lake; Mount Hood National Forest, Clackamas Lake; **Deschutes Co.**, Deschutes National Forest, Elk Lake; **Douglas Co.**, Umpqua National Forest, Bradley Creek; Umpqua National Forest, Cascade Pass; **Hood River Co.**, Mount Hood National Forest, Cloud Cap; **Klamath Co.**, Winema National Forest, 2 miles east of Cascade Pass; Crater Lake National Park, Goodbye campground; **Lane Co.**, Willamette National Forest, 1 mile west of Frog camp. Also known from outside the assessment area in Lassen Volcanic National Park in California.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of various Pinaceae above 4,700 ft. elevation, particularly *Abies magnifica*, *Pinus albicaulis*, *P. contorta*, and *Tsuga mertensiana*.

**Season:** Fruits in September and October.

**References:** THIERS, H.D., AND TRAPPE, J.M. 1969. Studies in the genus *Gastroboletus*. Brittonia 21:249-251.

**NOTES:**



Photo courtesy of Dr. J.M. Trappe

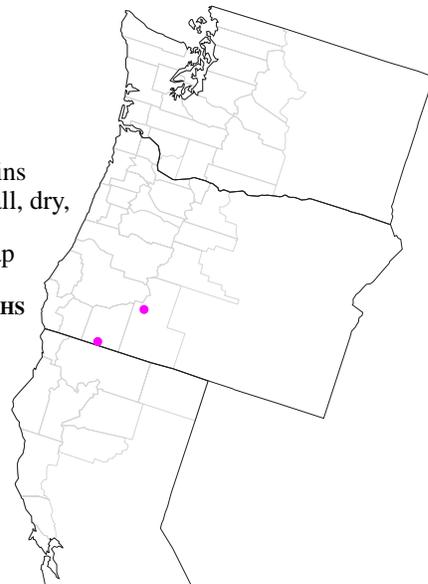
## *Gastroboletus vividus* Trappe & Castellano

ROD name *Gastroboletus* sp. nov. # Trappe 2897 and 7515

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 30-50 x 35-65 mm, boletoid but with cap margins strongly upturned, the cap surface yellow with red areas or blushed red overall, dry, felty. **FLESH** pale yellow, very slowly staining pale red where exposed, with narrow, olive to red zones at tube attachment and immediately beneath the cap surface. **TUBES** adnate-seceding, aligned from slightly below horizontal to nearly vertically upward, often contorted, 10-20 mm long, olive. **TUBE MOUTHS** circular to ellipsoid and 0.5-2 mm broad, initially brilliant yellow but soon becoming olive and by maturity red-orange to dark red, not bluing where bruised. **STEM** 20-30 x 10-25 mm, red furfureous at apex, abruptly bulbous below tube layer and brilliant yellow to sordid yellow. **CONTEXT** red at apex, pale yellow below, not changing color when exposed. **ODOR AND TASTE** not distinctive. **PERIDIAL EPICUTIS** a loose tangle of hyaline, thin-walled hyphae 4-8  $\mu\text{m}$  in diam at septa, the cells mostly slightly inflated. **PERIDIAL FLESH** of tightly interwoven, hyaline, thin-walled hyphae 3-8  $\mu\text{m}$  in diam, the cells generally not or only slightly inflated. **STEM FLESH** of hyphae similar to that of peridial flesh but tending to be parallel and with scattered cells inflated up to 25  $\mu\text{m}$ . **TUBE TRAMA** parallel, of hyaline, thin-walled hyphae 2-4  $\mu\text{m}$  in diam at septa, most cells slightly inflated. **SUBHYMENIUM** of hyphae similar to those of trama but interwoven. **BASIDIA** clavate, 30-45 x 9-11  $\mu\text{m}$  with (2-) 4 sterigmata 3-4 x 1  $\mu\text{m}$ . **CYSTIDIA** absent. **CLAMP CONNECTIONS** absent. **SPORES** fusoid, symmetrical, smooth, (11-) 13-18 (-22) x 6-7  $\mu\text{m}$ , thin-walled, in KOH golden yellow singly and bright brown-yellow in mass, inamyloid, in cotton blue moderate to deep blue.



**Distinguishing Features:** Characterized by the bright yellows and reds of fresh sporocarps and the inamyloid spores.

**Distribution:** Endemic to California and Oregon. Known from two sites within the range of the northern spotted owl: **OREGON**, Jackson Co., Rogue River National Forest, Jackson Gap; **Klamath Co.**, Crater Lake National Park, Cleatwood picnic area. One other site is outside the assessment area: **CALIFORNIA**, Fresno Co., Sierra National Forest, Rock Creek Rd.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of various Pinaceae above 5,000 ft. elevation, particularly *Abies magnifica* and *Tsuga mertensiana*.

**Season:** Fruits in July through September.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199x. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**



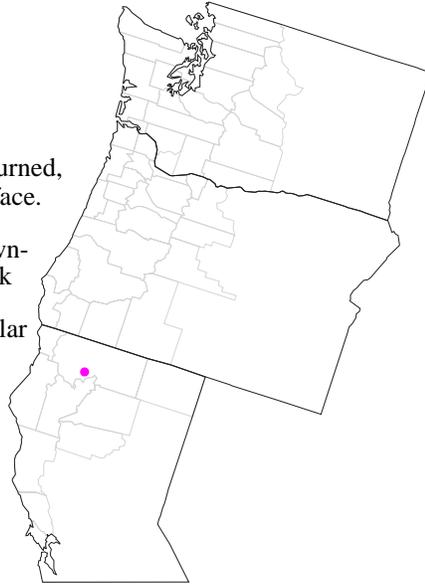
Photo courtesy of Dr. J.M. Trappe

*Gastrosuillus umbrinus* Trappe & CastellanoROD name *Gastrosuillus* sp. nov. # Trappe 7516

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 25-50 mm broad, boletoid, the cap margins upturned, the cap surface dark brown with a sparse tomentum over a shiny-smooth surface. **FLESH** brown-white to pale brown. **TUBES** adnate to decurrent, aligned from vertical to above horizontal, contorted and anastomosed, 8-17 mm long, brown-olive to dark brown. **TUBE MOUTHS** circular to ellipsoid, 0.5-2 mm broad, dark brown. **STEM** 10-20 x 7-15 mm, ventricose or tapering downward, barely protruding below the tubes, pale brown to brown with brown to black glandular dots from apex to base, the flesh pale brown with brown patches especially near the apex. **ODOR** pleasant. **PERIDIAL EPICUTIS** a loose tangle of hyaline, thin-walled hyphae 3-8  $\mu\text{m}$  in diam at septa, many cells slightly inflated, the tissue obscured by abundant, extracellular, brown granules. **PERIDIAL FLESH** of interwoven, hyaline, thin-walled hyphae 4-10  $\mu\text{m}$  in diam at septa, most cells strongly inflated, with scattered, extracellular, brown granules. **STIPE FLESH** of hyphae similar to that of peridium but tending to be parallel. **CAULOCYSTIDIA** clustered, obscured by dense deposits of amorphous pigment that are vinaceous in KOH mounts of fresh specimens, brown in long-dried specimens rehydrated in KOH. **TUBE TRAMA** parallel, of hyaline, thin-walled hyphae 1.5-3  $\mu\text{m}$  in diam at septa, a few cells slightly inflated. **SUBHYMENIUM** of  $\pm$  isodiametric cells 5-8  $\mu\text{m}$  in diam. **BASIDIA** (2-) 4-spored clavate, 18-28 (-35) x 7-9  $\mu\text{m}$ . **PLEUROCYSTIDIA** in clusters, hyaline, thin-walled, obtuse-cylindric, 60-90 x 6-9  $\mu\text{m}$ , often with crystalline contents, the bases obscured by dense deposits of brown, amorphous material, single cystidia scattered in hymenium, hyaline, thin-walled, obtuse-cylindric, 25-35 x 6-8  $\mu\text{m}$ . **SPORES** ellipsoid, the apiculus eccentric, smooth, thin-walled, 7-10 x (3-) 3.5-4  $\mu\text{m}$ , in KOH pale yellow singly and brown-yellow in mass, inamyloid, cyanophilic.



**Distinguishing Features:** Characterized by presence of glandular dots on the stem, dark brown tubes, and a small stem-columella.

**Distribution:** Endemic to California. Known from a single site within the range of the northern spotted owl: CALIFORNIA, Siskiyou Co., Klamath National Forest, Deadfall Meadows, west of Gazelle.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of various Pinaceae above 7,000 ft. elevation, particularly *Pinus monticola*.

**Season:** Fruits in September.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199X. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**



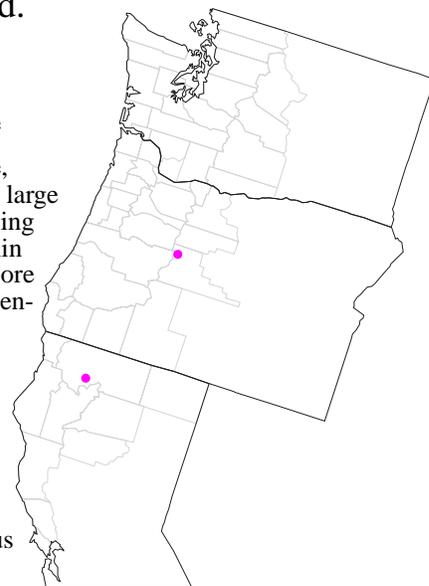
Photo courtesy of Dr. J.M. Trappe

*Gautieria magnicellaris* (Pilat) Stewart & Trappe, in ed.ROD name *Gautieria magnicellaris*

Family Hysterangiaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** as dried 11-24 x 9-27 mm, globose, subglobose, irregularly lobed, flattened or depressed at the point of attachment. **LOCULES** large and fully exposed. **RHIZOMORPH** basal, single,  $\pm 1.5$  mm diam. **PERIDIUM** drying brown from the exposed spore mass. Exposed tramal tissue mostly drying thin and obscured by spores, where visible pale yellow to red brown. **KOH** on spore mass red-brown, quickly fading, trama no reaction;  $\text{FeSO}_4$  on spore mass green-gray, gray-yellow-green; Melzer's reagent and **ETOH**, no reaction. **GLEBAL SPORE MASS** drying brown to red-brown, trama tissue drying pale yellow and red brown. **LOCULES** 0.5-10 x 0.5-6 mm, labyrinthiform to rounded, some continuous through the entire sporocarp, empty. **COLUMELLA** in mature sporocarps not prominent, white, drying pale orange-yellow. **PERIDIUM** (margins of exposed locules) of tiers of napiform cells 7-30 x 10-25  $\mu\text{m}$ . **COLUMELLA** of hyaline hyphae inflated up to 10  $\mu\text{m}$ , with spines  $\pm 1$   $\mu\text{m}$  projecting from the inner wall towards the interior. **TRAMA** of hyaline, thin-walled, septate hyphae, 2-7  $\mu\text{m}$  broad, weakly gelatinized with age; oleiferous hyphae rare, detectable in Melzer's reagent. **SUBHYMENIUM** a palisade of subpolygonal cells 9-32 x 7-13  $\mu\text{m}$ , thin-walled, merging into intertwined hyphae of the trama. **BASIDIA** 4-spored, 40-60 x 11-16  $\mu\text{m}$ , thin-walled, broadly clavate, sterigmata 2-2.5 x 2-2.5  $\mu\text{m}$ . **BRACHYBASIDIOLES** 15-33 x 7-9  $\mu\text{m}$ , cystidioid elements infrequent. **CLAMP CONNECTIONS** absent. **SPORES** ellipsoid to broadly ellipsoid, 17-24 x 12-15 (-18)  $\mu\text{m}$  including sterigmal appendage and epispore, 17-24 x 8-12  $\mu\text{m}$  excluding epispore, wall  $\pm 1.5$   $\mu\text{m}$  thick, sterigmal appendage 2-3  $\mu\text{m}$  at the base of epispore, 1-3  $\mu\text{m}$  long, ornamentation of 9-13 forking and anastomosing, longitudinal to occasionally spiraling ridges, (1-) 2-3.5 (-4)  $\mu\text{m}$  tall, 3-5  $\mu\text{m}$  broad, in **KOH** pale green-yellow singly, yellow in mass, slowly cyanophilic.



**Distinguishing Features:** Characterized by the ridged, ellipsoid to broadly ellipsoid, large spores, and exposed gleba.

**Distribution:** Also known from Michigan, New York, Europe, and Mexico. Known from two sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Deadfall Meadows; **OREGON**, Deschutes Co., Willamette National Forest, West Lava campground. Not known from Washington.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Pinus* spp. in Mexico and *Abies concolor* in the western North America above 5,000 ft. elevation.

**Season:** Fruits from July through October.

**References:** CÁZARES, E., J. GARCÍA, J. CASTILLO, AND TRAPPE, J.M. 1992. Hypogeous fungi from northern Mexico. *Mycologia* 84:341-359.

**NOTES:**



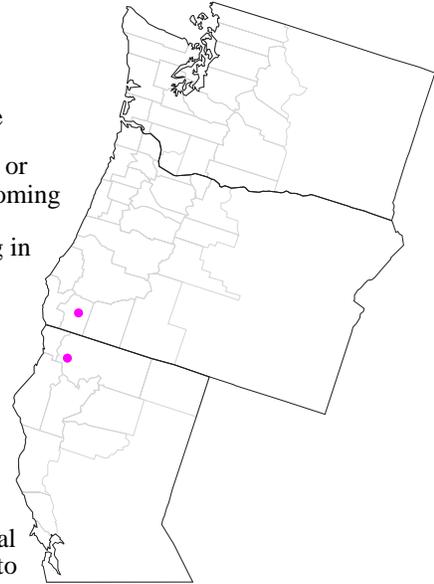
Photo courtesy of Dr. M.A. Castellano

***Gautieria otthii* Trog**ROD name *Gautieria otthii*

Family Hysterangiaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** up to 5 cm in diam, globose to subglobose, flat or depressed. **PERIDIUM** white with red tones, but emergent apical surfaces becoming brown with patches of ochre to yellow. **KOH** immediately a faint dark red-orange;  $\text{FeSO}_4$ , pale green; Melzer's reagent, quickly red-brown, soon fading in intensity;  $\text{EtOH}$ , no reaction. **GLEBA** pale brown to yellow brown. **KOH** on trama no reaction;  $\text{FeSO}_4$ , pale green; Melzer's reagent, immediately brown, fading in intensity;  $\text{EtOH}$ , no reaction. **LOCULES** up to 0.5 x 2 mm, labyrinthiform, generally radiating away from the stipe, empty. **COLUMELLA** gray white, cartilaginous, drying red-brown, up to 2 mm broad, branching near the base. **PERIDIUM** 65-150  $\mu\text{m}$  thick, of thick-walled, napiform cells 17-40  $\mu\text{m}$  in diam. **COLUMELLA** of hyaline hyphae 1-5  $\mu\text{m}$  in diam, inflated to 18  $\mu\text{m}$  in diam adjacent to septa, inflated areas filled with granules and spines  $\pm 1 \mu\text{m}$  long, projecting from the inner wall surface toward the interior. **TRAMA** narrow, of hyaline, thin-walled, hyphae 3-5  $\mu\text{m}$  in diam, gelatinizing in age, oleiferous hyphae present. **SUBHYMENIUM** of subpolygonal cells 10-30 x 5-13  $\mu\text{m}$ , progressively smaller as the subhymenium merges into the linear hyphae composing the trama. **BASIDIA** 4-spored, (12-) 18-30 (-45) x 6-9  $\mu\text{m}$ , thin-walled, clavate. **SPORES** ellipsoid, 13-18 x 7-10  $\mu\text{m}$  including sterigmatal appendage and episporium, 13-18 x 5-7  $\mu\text{m}$  excluding episporium, often somewhat flattened at the apex, wall  $\pm 1 \mu\text{m}$  thick, sterigmatal appendage truncate, prominent, 1-2  $\mu\text{m}$  wide, ornamentation of 9-12, sometimes forking, longitudinal ridges, 0.5-1.5 (-2)  $\mu\text{m}$  tall, 2-3  $\mu\text{m}$  broad, ridge margins humped to cleft, grooves between ridges smooth to finely crenulate, in **KOH** pale green-yellow singly, yellow in mass, in Melzer's reagent, red-orange singly, dark red-orange in mass, slowly cyanophilic.



**Distinguishing Features:** Characterized by longitudinally ridged, small spores and short sterigmata.

**Distribution:** Also known from Switzerland. Known from two sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Marble Mountain Wilderness Area, trail to Haypress Meadows; **OREGON**, Josephine Co., Dutcher Creek.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Pinus ponderosa* and other Pinaceae between 2,400 ft. to 5,000 ft. elevation.

**Season:** Fruits in August and October.

**References:** TROG, J.G. 1857. Naturforsch. Ges. Bern Mitt. p. 43.

**NOTES:**

No Photograph Available

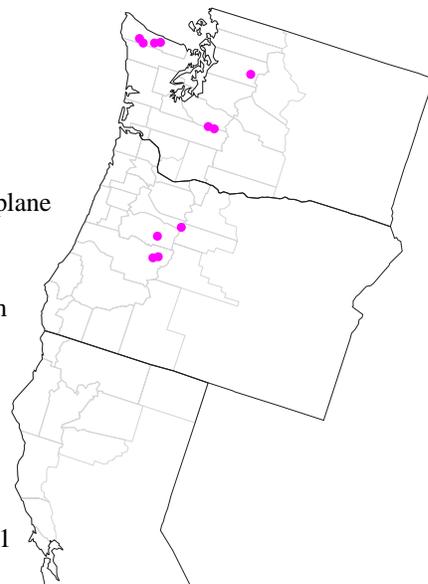
## *Gelatinodiscus flavidus* Kanouse & A.H. Smith

ROD name *Gelatinodiscus flavidus*

Family Leotiaceae

Morphological Habit cup fungus

**Description:** **SPOROCARPS** short-stipitate, apotheciate, to about 4 mm tall. **APOTHECIA** regular from above, 1-5 mm in diam, at first concave, becoming plane then convex at maturity. **HYMENIUM** bright yellow, even, opaque. **MARGIN** glabrous, not extending beyond hymenial surface. **ABHYMENIAL SURFACE** concolorous with hymenial surface, appearing translucent or gelatinous, glabrous except for short yellow fuzz at the very base. **STEM** slender, 2-5 mm long, about 1 mm thick. **ASCI** opening by a broad pore, 8-spored, amyloid in part of the apical region, maturing simultaneously in nature. **PARAPHYSES** curved at the apices, branched, hyaline. **SPORES** nearly ellipsoid to oblong-ellipsoid but with one end slightly broader than the other, 26-34 x 9-11  $\mu\text{m}$ , biguttulate, smooth, hyaline to yellow at first, brown spore print.



**Distinguishing Features:** Characterized by bright yellow apothecia on a short, bright yellow, translucent stem and spores that measure 26-34 by 9-11  $\mu\text{m}$  contained within an inoperculate ascus.

**Distribution:** Endemic to Oregon and Washington. Known from ten sites within the range of the northern spotted owl: **OREGON**, Linn Co., Iron Mountain; Lane Co., Willamette National Forest, Lamb Butte Recreational Area, The Potholes; Marion Co., Mount Hood National Forest, 2 miles southwest of Breitenbush Lake; **WASHINGTON**, Clallam Co., Olympic National Park, Deer Lake; Olympic National Park, Hurricane Ridge Rd.; Olympic National Park, Sol Duc Park; Lewis Co., Mount Rainier National Park, Narada Falls; Mount Rainier National Park, Reflection Falls; Pierce Co., Mount Rainier National Park, Ricksetter Point; Snohomish Co., Mount Baker-Snoqualmie National Forest, Silver Tip Lake. Although reported by Carpenter (1976) from Lane Co. and Jefferson Co. in Oregon, these collections were not found.

**Substrate and habitat:** Forms scattered to gregarious sporocarps on cones, twigs and foliage of *Chamaecyparis nootkatensis*. It consistently fruits near or under melting snowbanks.

**Season:** Fruits from April through August.

**References:** CARPENTER, S.E. 1976. Taxonomy, morphology and ontogeny of *Gelatinodiscus flavidus*. Mycotaxon 3:209-232. KANOUSE, B.B., AND A.H. SMITH. 1940. Two new genera of Discomycetes from the Olympic National Forest. Mycologia 32:756-759.

**NOTES:**

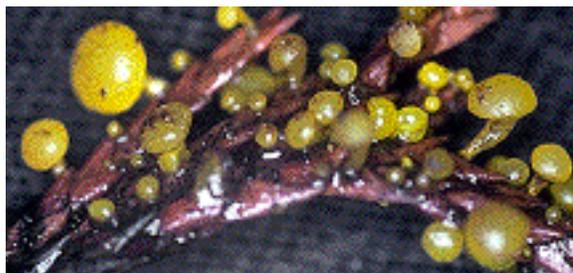


Photo courtesy of Dr. I. O'Dell  
Photo courtesy of Dr. S.A. Redhead

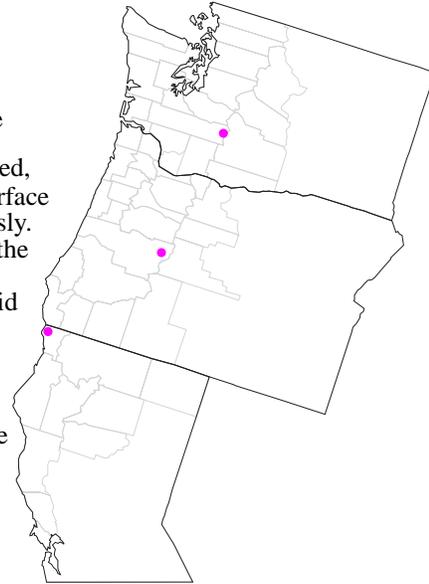
Photo available only in print version

***Glomus radiatum*** (Thaxter) Trappe & GerdemannROD name *Glomus radiatus*

Family Glomaceae

Morphological Habit sequestrate

**Description:** SPORO CARPS up to 9 x 7 x 3 mm, generally flattened and lobed, firm, attached to roots or organic matter, near white to gray-yellow where surface hyphae become matted. PERIDIUM absent. Sporocarp developing acrogenously. SUBTENDING HYPHAE somewhat coarser than glebal hyphae, the opening into the spore up to 6 µm wide, only partially occluded by spore wall thickening but occluded by a plug below the spore base. SPORES ellipsoid to oblong, obovoid or rarely globose, at or near the surface thin-walled and vesicular, becoming progressively thicker walled in the direction of the sporocarp base, 60-110 (-120) x 48-75 (-90) µm, arranged in a distinct radial pattern, grouped or widely dispersed in a matrix of a coarse thin-walled hyphae, usually containing hyphae similar to those in gleba, wall 4-8 µm thick, laminate, pale yellow.



**Distinguishing Features:** Characterized by its large spores with thick walls and the striking radial arrangement of spores within the sporocarp.

**Distribution:** Endemic to California and Oregon. Known from three sites within the range of the northern spotted owl: CALIFORNIA, Del Norte Co., 2 miles south of the city of Smith River; OREGON, Lane Co., Willamette National Forest, Lamb Butte Scenic Area, The Potholes; WASHINGTON, Lewis Co., Wenatchee National Forest, Goat Rocks Wilderness Area, Knuppenburg Lake.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Chamaecyparis nootkatensis* and *Sequoia sempervirens* below 5,000 ft. elevation.

**Season:** Fruits in June, October, and November.

**References:** GERDEMANN, J.W., AND J.M. TRAPPE. 1974. The Endogonaceae in the Pacific Northwest. Mycol. Mem. 5:1-76.

**NOTES:**

No Photograph Available

*Gymnomyces abietis* Trappe & Castellano, in ed.

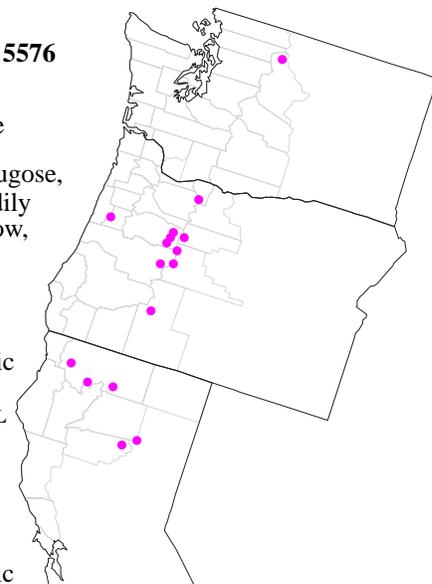
**ROD name** *Gymnomyces* sp. nov. # Trappe 1690, 1706, 1710, 4703, 5052, 5576  
7545, *Martellia* sp. nov. # Trappe 311, 1700, 5903

**Family** Russulaceae

**Morphological Habit** sequestrate

**Description:** **SPOROCARPS** 6-28 x 10-40 mm, the base indented, radially rugose, and with soil attached by basal mycelium. **PERIDIUM** 100-200  $\mu\text{m}$  thick, readily separable, in youth thin, white, pubescent, soon becoming smooth, pale yellow, sometimes with rose-blushed to orange-brown areas, sometimes slowly becoming slightly brown, often rupturing to expose glebal locules. **GLEBA** white in youth, soon pale orange-yellow. **COLUMELLA** white, small to prominent, basal pad of sterile tissue. **ODOR AND TASTE** not distinctive.

**PERIDIAL EPICUTIS** a loose to tightly packed trichodermium of obtuse-cylindric to clavate or occasionally versiform, hyaline, thin-walled end cells (2-) 3-5  $\mu\text{m}$  in diam, this in age collapsing to appear appressed-interwoven. **PERIDIAL SUBCUTIS** of interwoven, hyaline, thin-walled hyphae 2-5  $\mu\text{m}$  in diam with scattered cells inflated up to 10  $\mu\text{m}$  in diam and occasional nests of sphaerocysts where subcutis and tramal intersections merge. **TRAMA** of subparallel, hyaline, thin-walled hyphae 2-5  $\mu\text{m}$  in diam, at tramal junctions with occasional to many cells inflated up to 25  $\mu\text{m}$  in diam and with occasional nests of sphaerocysts. **SUBHYMENIUM** with 3-4 tiers of isodiametric cells, those nearest the central stratum of the trama up to 6-15 (-25)  $\mu\text{m}$  in diam. **BASIDIA** 1-4-spored, clavate, 23-29 (-40) x (6-) 8-13 (-15)  $\mu\text{m}$ , sterigmata  $\pm$  5 x 1  $\mu\text{m}$ . **CYSTIDIA** absent. **SPORES** globose to broadly ellipsoid, 8-10 (-14) x (7-) 7.5-9.5 (-11)  $\mu\text{m}$ , hyaline, ornamented in youth by unevenly amyloid rods and inamyloid lines  $\leq$  0.5 x 0.2-0.5  $\mu\text{m}$ , rods sometimes joined in short rows, by maturity the rods evenly amyloid, (0.3-) 1 (-1.5) x 0.3-1  $\mu\text{m}$ , often joined to form short, thick lines or connected by narrow, low, amyloid lines on the spore surface to form a partial to or sometimes nearly complete reticulum; sterigmatal appendage with a strongly amyloid, basal collar or a large, amyloid deposit on one side.



**Distinguishing Features:** Varies strikingly with developmental stages. *Gymnomyces abietis* differs from *Martellia alba* (Harkness) Singer & Smith in lacking cystidia and gelatinized peridial hyphae. In addition, the spore ornamentation of *G. abietis* is evenly amyloid, with rods often joined to form short, thick lines. The spore ornamentation of *M. alba*, is erratically amyloid, and the rods are occasionally connected by low, inamyloid lines. The spores of *G. abietis* are nearly all 8-10  $\mu\text{m}$  long, whereas those of *M. alba* are nearly all 10-15  $\mu\text{m}$  long.

**Distribution:** Endemic to the Pacific Northwest. Known from fifteen sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Carter Meadows summit; Marble Mountain Wilderness area, Haypress Meadows; Mount Shasta, Wagon camp; **OREGON**, Benton Co., Siuslaw National Forest, Mary's Peak summit; Clackamas Co., Mount Hood National Forest, Phlox Point; Deschutes Co., Three Sisters Wilderness Area, trail up South Sister; Jefferson Co., Mount Jefferson Wilderness Area, south of Shirley Lake; Klamath Co., Crater Lake National Park, Mount Scott; Lane Co., Willamette National Forest, West Lava campground; Willamette National Forest, 1 mile up Olallie trail; Linn Co., Willamette National Forest, Wildcat Mountain; Willamette National Forest, Bunchgrass Mountain; Willamette National Forest, Parish Lake trail; Willamette National Forest, Crescent Peak, on ridge just south of summit; **WASHINGTON**, Chelan Co., Mount Baker-Snoqualmie National Forest, Rainy Pass, trail to Lake Ann. Two sites are known from outside the assessment area one in Lassen National Park, the other in Tehama Co., Mineral.

**Substrate and habitat:** Forms sporocarps beneath the soil surface associated with the roots of *Abies* spp. and possibly other Pinaceae above 3,000 ft. elevation.

**Season:** Fruits from July through October.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199X. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**



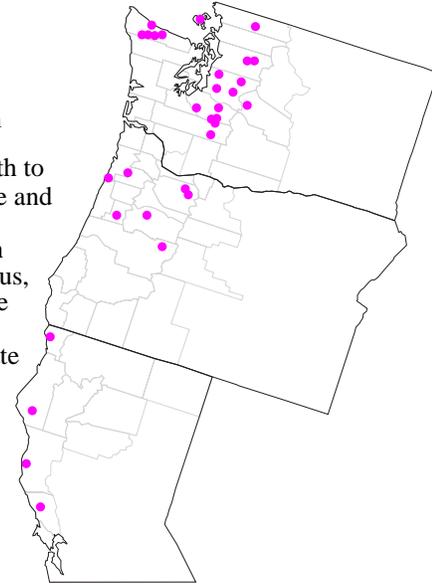
Photo courtesy of Dr. J. Trappe

*Gymnopilus punctifolius* (Peck) SingerROD name *Gymnopilus punctifolius*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 25-100 mm broad, convex with enrolled margin, smooth to slightly scaly near the disc, moist to dry, color a variable blend of green, blue and yellow, (often a mixed blue-green) retained when dried. **FLESH** thick, green-ochraceous. **GILLS** green-yellow becoming dirty brown-yellow, spotted with yellow or rusty-orange stains. **STEM** (25-) 100-150 X 5-10 (-14) mm, flexuous, striate, concolorous with cap, often with distinctive lavender mycelium at the base. **VEIL** absent. **ODOR** not distinctive. **TASTE** very bitter. **PILEIPELLIS** a cutis of repent brown hyphae with projecting narrow (1.3-3 µm diam) capitate pileocystidia. **LAMELLAR TRAMA** subregular, with yellow pigment soluble in KOH. **PLEUROCYSTIDIA AND CHELOCYSTIDIA** similar, 20-30 x 3-4 µm, capitate-ventricose to filiform, rare to abundant, hyaline. **CLAMP CONNECTIONS** present. **SPORES** subovoid to subellipsoid, 4-5.5 (-6) x 3.5-4 (-5) µm, punctate roughened, germ pore absent, dextrinoid.



**Distinguishing Features:** Characterized by green-blue-yellow gilled sporocarp with green-yellow gills, a twisted striate stem with lavender mycelium at the base, growing on brown cubicle rotted wood, and a rusty-orange spore print.

**Distribution:** Endemic to the western United States, east to Wyoming. Known from thirty-five sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Jedediah Smith State Park; **Humboldt Co.**, Humboldt Redwoods State Park; Prairie Creek State Park; **Mendocino Co.**, Jackson State Forest, junction of rd. 408 and rd. 409; **Sonoma Co.**, Armstrong Redwoods State Park; **OREGON**, **Benton Co.**, Bureau of Land Management, Slaem District, Belfountain; **Clackamas Co.**, Mount Hood National Forest, Still Creek; **Lane Co.**, McKenzie Bridge; **Linn Co.**, Bureau of Land Management, Salem District, east of Crabtree; **Tillamook Co.**, Siuslaw National Forest, Cascade Head Experimental Forest; Bureau of land Management, Slaem District, Bald Mountain; **WASHINGTON**, **Clallam Co.**, Joyce; Olympic National Park, Elwha campground; Olympic National Park, Olympic Hot Springs; Olympic National Park, Soleduc campground B; **Grays Harbor Co.**, Olympic National Forest, Quinault Research Natural Area; Olympic National Forest, Quinault Research Natural Area, Humptulips ridge; **Jefferson Co.**, Olympic National Park, Twin Creek; **King Co.**, near Woodinville; Money Creek campground; near Snoqualmie Pass, Denny Creek forest camp; Lake Wilderness; **Kittitas Co.**, Easton, Lake Kachess campground; **Lewis Co.**, near Randle, Cispus Environmental Learning Center; **Pierce Co.**, Mount Rainier National Park, Lower Tehoma Creek; Mount Rainier National Park, Green Lake; Mount Rainier National Park, Ipsut Creek campground; Kirkland Pass; Mount Rainier National Park, St. Andrews Park; Mount Rainier National Park, Rampart Ridge; Mount Rainier National Park, Longmire campground; Mount Rainier National Park, Kautz Creek; **San Juan Co.**, Friday Harbor Biological Station; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Sloan Creek trail; Mount Baker-Snoqualmie National Forest, Barlow Pass; Mount Baker-Snoqualmie National Forest, Monte Cristo; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, Ermine Creek.

**Substrate and habitat:** Forms sporocarps on well-decayed, large, conifer stumps and snags containing brown cubical rot.

**Season:** Fruits from August through January.

**References:** HESLER, L.R. 1969. North American Species of *Gymnopilus*. Mycol. Mem. 3:1-117.

## NOTES:

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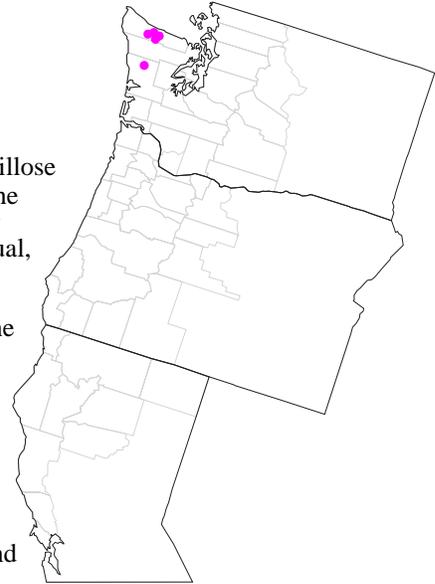
Photo courtesy of University of Michigan  
Photo courtesy of Dr. T. O'Dell

*Hebeloma olympianum* Smith, Evenson & MitchelROD name *Hebeloma olympianum*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 10-25 mm broad, obtuse to convex, initially faintly fibrillose becoming smooth, viscid, dull cinnamon disc becoming more pale towards the margin. FLESH thin, brown. GILLS pallid, becoming brown with age, neither beaded with droplets nor spotted with spores. STEM 20-40 x 2.5-3.5 mm, equal, faintly fibrillose, pale and silky at apex, more dark brown toward base. VEIL faintly fibrillose, not forming an annular zone. ODOR AND TASTE mild, not distinctive. PILEIPELLIS an ixotrichoderm with abundant 1.5  $\mu\text{m}$  hyphae in the epicuticular layer, a hyphoid layer present beneath the epicuticular layer. CHEILOCYSTIDIA (18-) 22-27 x 4-7  $\mu\text{m}$ , relatively short, filamentous to narrowly clavate. SPORES 7-9 x 4-5.5  $\mu\text{m}$ , finely punctate roughened, asymmetrical, more or less dextrinoid, dull brown spore print.



**Distinguishing Features:** Characterized by the small inconspicuous gilled sporocarps with a viscid, brown cap with pallid gills, fibrillose stem and a dull brown spore print.

**Distribution:** Endemic to Washington. Known from five sites within the range of the northern spotted owl: WASHINGTON, Clallam Co., Olympic National Park, Soleduc Falls trail; Olympic National Park, Olympic Hot Springs; Olympic National Park, Whiskey Bend; Olympic National Park, Elwha River trail; Grays Harbor Co., Olympic National Forest, Quinault Research Natural Area.

**Substrate and habitat:** Sporocarps usually occur in association with the roots of various Pinaceae spp.

**Season:** Fruits in October and November.

**References:** SMITH, A.H., EVENSON, AND MITCHEL 1983. Veiled Species of *Hebeloma* in the Western United States. 101 pp.

**NOTES:**



Photo courtesy of Dr. T. O'Dell

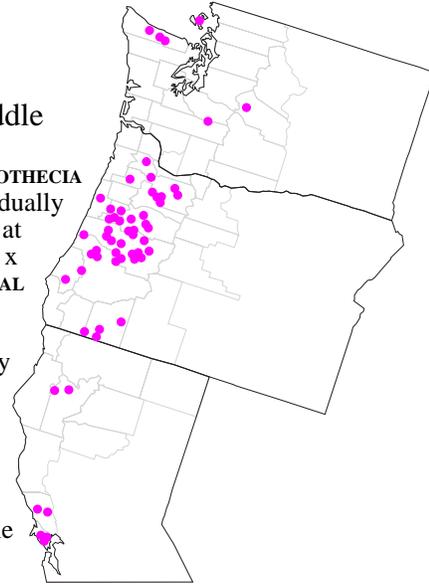
*Helvella compressa* (Synder) N.S. WeberROD name *Helvella compressa*

Family Helvellaceae

Morphological Habit Elfin Saddle

**Description:** SPOROCARPS stipitate, apotheciate, 20-80 (130) mm tall. APOTHECIA when young with margin curved over hymenial surface and obscuring it, gradually expanding, finally 2 (-3) prominent lobes usually separated by a acute sinus, at maturity compressed, in face view to 20-30 (-40) mm tall x 18-30 mm broad x 7-13 (-25) mm thick. HYMENIAL SURFACE dark gray-brown, even. ABHYMENIAL SURFACE ivory to off-white, densely and persistently villose, even. MARGIN obscuring young hymenium, straight to flaring in age. STEM 15-120 x 3-10 mm, basically round in cross section, equal to tapering toward the apex, ivory to cream color or off-white. ASCI operculate, inamyloid, thin-walled, 8-spored. SPORES ellipsoid, 19.5-21 x 12-14 µm.

**Distinguishing Features:** Characterized by a stipitate, apotheciate sporocarp, the margins of the apothecium curve over and obscure the hymenial surface when young, the hymenial surface is dark gray-brown while the abhymenial surface ivory to off-white and densely villose.



**Distribution:** Endemic to western United States. Known from fifty-nine sites within the range of the northern spotted owl: **CALIFORNIA**, Marin Co., Smauel P. Taylor State Park, Lily Gulch; Audubon Canyon Ranch, gulch above Volunteer Canyon; Audubon Canyon Ranch, below Bolinas Ridge Rd.; Mount Tamalpais; **Sonoma** Co., Annadel State Park; Camp Meeker; **Trinity** Co., Gray Falls, Trinity campground; Shasta-Trinity National Forest, Hobo Gulch; **OREGON**, **Benton** Co., Siuslaw National Forest, Mary's Peak; Bureau of Land Management (BLM), Salem District, near Finely Wildlife Refuge; BLM, Salem District, Mary's Peak Resource Area; Corvallis, Beechwood Place; Witham Hill; **Clackamas** Co., Wilsonville; Rivermill Park, near Estacada; Peterson Rd., near Estacada; BLM, Salem District, Elk Prairie; BLM, Salem District, Cascades Resources Area; **Douglas** Co., BLM, Coos Bay District, Cedar Creek; **Jackson** Co., Rogue River National Forest, Camp Latagwa; Rogue River National Forest, Armstrong Gulch; Rogue River National Forest, Beaver/Newt Gulch; Rogue River National Forest, Haskins Gulch; Rogue River National Forest, French Gulch; Thompson Creek; **Lane** Co., BLM, Eugene District, Swamp Creek; BLM, Eugene District, Little Fall Creek; BLM, Eugene District, Fox Hollow Research Natural Area; BLM, Eugene District, Harms Creek; BLM, Eugene District, Fish Creek; BLM, Eugene District, Jasper Creek; BLM, Eugene District, Anthony Creek; BLM, Eugene District, Rattlesnake Creek; BLM, Eugene District, Middle Creek; BLM, Eugene District, Lost Creek; BLM, Eugene District, Call Creek; BLM, Eugene District, Gosage Creek; BLM, Eugene District, Mill Creek; BLM, Eugene District, Badger Mountain; BLM, Eugene District, Martin Creek; BLM, Eugene District, Black Butte; **Lincoln** Co., near Siletz; **Linn** Co., BLM, Salem District, Cascades Resources Area; BLM, Eugene District, Shotgun Creek; BLM, Eugene District, Parsons Creek; BLM, Eugene District, Cash Creek; near Scio; Peterson's Butte; **Marion** Co., BLM, Salem District, Crooked Finger; **Washington** Co., BLM, Salem District, Wirts Creek; **Yamhill** Co., BLM, Salem District, Tillamook Resource Area; **WASHINGTON**, **Clallam** Co., Olympic National Park, Lake Crescent; Olympic National Park, Sol Duc Park; Olympic National Park, Ennis Creek; **San Juan** Co., Friday Harbir Biological Station; Olympic National Park, La Poel campground; Olympic National Park, east side of Lake Mills; Olympic National Park, Mount Angeles; **Kittitas** Co., Easton; **Pierce** Co., Mount Rainier National Park, lower Tehoma Creek.

**Substrate and habitat:** On soil in low to mid-elevation, mixed woods often including *Pseudotsuga menziesii* and *Quercus* spp. and which may be subject to low levels of occasional disturbance.

**Season:** Fruits from march through July.

**References:** WEBER, N.S. 1975. Notes on western species of *Helvella*. I. Beih. Nova Hedwigia 51:25-38.

**NOTES:**

Photo available only in print version



Photo courtesy of Dr. M. Beug  
Photo courtesy of M. Seidl/Dr. H. Thiers

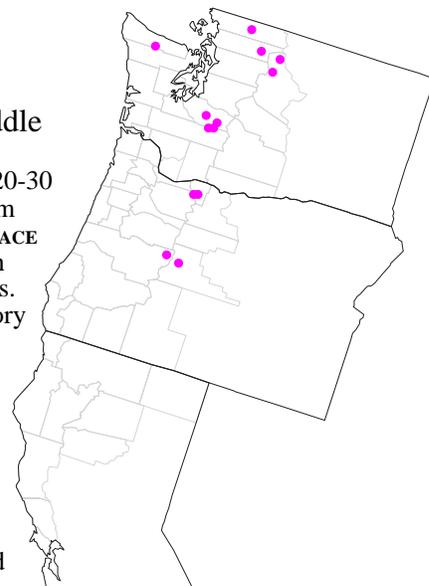
*Helvella crassitunicata* N.S. WeberROD name *Helvella crassitunicata*

Family Helvellaceae

Morphological Habit Elfin Saddle

**Description:** **SPOROCARPS** sessile to short stipitate, apotheciate, up to 20-30 mm tall. **APOTHECIA** bowl-shaped when young, spreading in age, regular from above to slightly compressed, to 40 mm in diam at maturity. **HYMENIAL SURFACE** some shade of brown to gray-brown. **ABHYMENIAL SURFACE** concolorous with hymenial surface near margin, paler toward the base, lacking extensive ridges. **STEM** up to 20 mm long, consisting of rounded ribs resembling soft folds, ivory to off-white. **ASCI** operculate, inamyloid, 8-spored, with a single basal scar. **PARAPHYSES** straight, narrowly clavate, by maturity at least some with distinctly thickened walls. **SPORES** ellipsoid, 23-28 (-30) x 13-15  $\mu\text{m}$ , smooth.

**Distinguishing Features:** Characterized by a sessile to short stipitate, apotheciate sporocarp. The apothecium is bowl-shaped, with a brown to gray-brown hymenium and abhymenial surface. The abhymenial surface is ridged and becomes paler toward the base, the ridges do not extend to the apothecium margin. The spores are 23-26  $\mu\text{m}$  long.



**Distribution:** Endemic to Oregon and Washington. Known from nineteen sites within the range of the northern spotted owl: **OREGON, Deschutes Co.**, Deschutes National Forest, Three Creek Lake; **Hood River Co.**, Mount Hood National Forest, Timberline trail; Mount Hood National Forest, Tilly Jane campground; **Lane Co.**, Willamette National Forest, Mount Washington Wilderness, trail near Benson Lake; **WASHINGTON, Chelan Co.**, Wenatchee National Forest, Glacier Peak Wilderness, Lyman Lake; Okanogan National Forest, Lake Ann trailhead; Mount Baker-Snoqualmie National Forest, Rainy Pass; **Clallam Co.**, Olympic National Park, Bogachiel Peak; **Lewis Co.**, Mount Rainier National Park, Eagle Peak trail; Mount Rainier National Park, Mazama Ridge; Mount Rainier National Park, Narada Falls; Mount Rainier National Park, Pinnacle Peak; **Pierce Co.**, Mount Rainier National Park, Green Lake; Mount Rainier National Park, Cushman Ridge; Mount Rainier National Park, Round Pass; Mount Rainier National Park, Gobbler's Knob; Mount Rainier National Park, Indian Henry's Hunting Ground; **Skagit Co.**, Mount Baker-Snoqualmie National Forest, Hidden Lake Peak; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, Austin Pass region.

**Substrate and habitat:** Scattered to gregarious on soil, especially along trails, in montane regions with *Abies* spp.

**Season:** Fruits from August through October.

**References:** WEBER, N.S. 1975. Notes on western species of *Helvella*. I. Beih. Nova Hedwigia 51:25-38.

**NOTES:**

Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. J.A. Weber

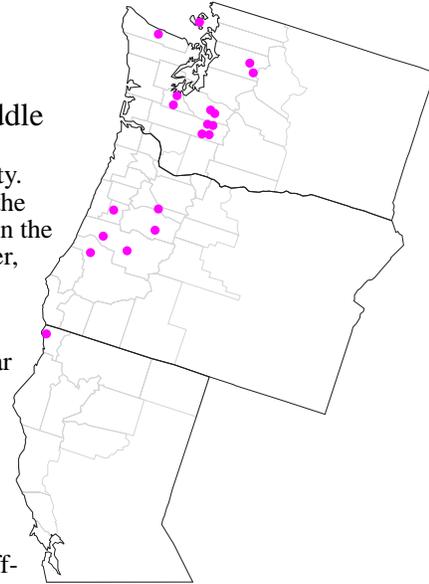
Photo available only in print version

*Helvella elastica* Bulliard:FriesROD name *Helvella elastica*

Family Helvellaceae

Morphological Habit Elfin Saddle

**Description:** **SPOROCARPS** stipitate, apotheciate, 20-110 mm tall at maturity. **APOTHECIUM** when very small broadly saddle-shaped, margins not covering the young hymenium, by maturity typically 2 (-3) lobed, often appearing tilted on the apex of the stem, margins of each lobe recurved and folded one over the other, lobes typically separated by a broad sinus. **HYMENIAL SURFACE** pale to dark brown (black brown at high elevations, rarely white). **ABHYMENIAL SURFACE** ivory to cream-colored, glabrous. **STEM** rounded in cross section, often tapering slightly to the apex, ivory to cream-colored or tinged with ochre near the base. **ASCI** operculate, inamyloid, thin-walled, 8-spored. **SPORES** ellipsoid, 18-23 (-24) x 11.5-13.5 µm, smooth (occasionally with coarse warts on some spores in age).



**Distinguishing Features:** Characterized by a stipitate, apotheciate sporocarp, the margins never obscure the hymenial surface when young, the hymenial surface is pale to dark brown, the abhymenial surface is ivory to off-white and glabrous, and the stem is round. Several taxa have a rounded stem and brown hymenium on a lobed apothecium, *H. elastica* is the only one in this region with a glabrous abhymenial surface.

**Distribution:** This taxon is scarce in the Pacific Northwest but widespread elsewhere. Known from twenty sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Lake Earl Wildlife Area; **OREGON**, Benton Co., Siuslaw National Forest, Woods Creel Rd.; Douglas Co., Bureau of Land Management (BLM), Coos Bay District, near Sawyer's Bridge; Lane Co., BLM, Eugene District, Lost Creek; BLM, Eugene District, Dogwood Creek; Linn Co., Willamette National Forest, Oxbow Organizational Area; Marion Co., BLM, Salem District, Sinkler Creek; WASHINGTON, Clallam Co., Olympic National Park, lower Elwha River; Lewis Co., Gifford Pinchot National Forest, Falls trail; Gifford Pinchot National Forest, Iron Creek day use area; Gifford Pinchot National Forest, Cispus Environmental Center; Pierce Co., Mount Rainier National Park, Ipsut Creek campground; Mount Rainier National Park, Green Lake; Mount Rainier National Park, near southwest entrance; Mount Rainier National Park, lower Tehoma Creek; Mount Rainier National Park, Longmire; Mount Rainier National Park, lower Kautz Creek; San Juan Co., Friday Harbor Biological Station; Snohomish Co., Mount Baker-Snoqualmie National Forest, Barlow Pass; Mount Baker-Snoqualmie National Forest, San Juan campground; Thurston Co., Priest Point Park; Tacoma Prairies.

**Substrate and habitat:** Typically gregarious on soil under conifers in damp areas. While it does not routinely fruit in recently (within 2 years) heavily disturbed areas, it may fruit in open areas under conifers and in areas subject to limited foot traffic.

**Season:** Fruits from May through December.

**References:** WEBER, N.S. 1975. Notes on western species of *Helvella*. I. Beih. Nova Hedwigia 51:25-38.

**NOTES:**

Photo available only in print version



Photo courtesy of University of Michigan  
Photo courtesy of Dr. G. Barron

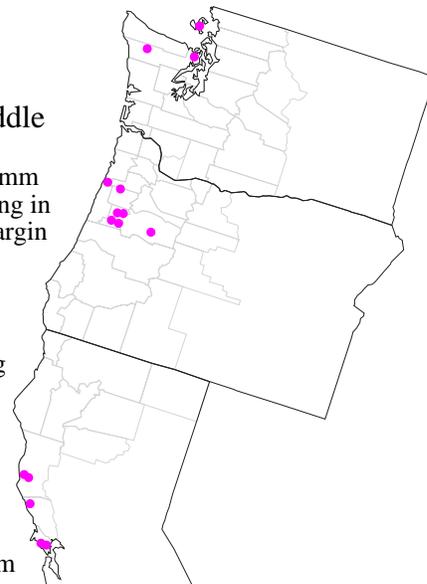
*Helvella maculata* N.S. WeberROD name *Helvella maculata*

Family Helvellaceae

Morphological Habit Elfin Saddle

**Description:** **SPOROCARPS** stipitate, apotheciate, at maturity (15-) 50-155 mm tall. **APOTHECIA** when young with margin obscuring the hymenium, expanding in age and then 2 (-3) lobed and slightly wrinkled over the apex of the stalk, margin straight to flaring. **HYMENIAL SURFACE** gray-brown, obscurely mottled. **ABHYMENIAL SURFACE** cream colored at first then yellow, in age with gray to gray-brown areas, densely villose at all ages. **STEM** 15-125 x 2-3.5 mm at maturity, strongly ribbed with ribs not continuing on abhymenial surface of apothecium, lacunose, nearly white to very pale buff when young developing gray-brown patches in age. **ASCI** operculate, inamyloid, 8-spored. **SPORES** ellipsoid, 20-23.5 x 12-14 (-15)  $\mu\text{m}$ , smooth.

**Distinguishing Features:** Characterized by a stipitate, apotheciate sporocarp, the margins of the apothecium curve over and obscure the hymenial surface when young, the hymenial surface is gray-brown, abhymenial surface is cream at first, then yellow and densely villose, the stem is strongly ribbed. *Helvella crispa* (Scop. : Fr.) Fr. differs in being ivory to pale buff overall and not developing gray-brown discolorations; it also has slightly smaller spores, 17-21 (-24) x 10-13 (-14)  $\mu\text{m}$ . *Helvella compressa* differs in having a stem that is round and smaller spores.



**Distribution:** Widespread across the North Temperate zone. Known from fifteen sites within the range of the northern spotted owl: **CALIFORNIA**, Marin Co., Alpine Lake; Audobon Canyon Ranch, Galloway Canyon; Mount Tamalpias; **Mendocino** Co., Dimmick Memorial Grove State Park; Navarro River area, Masonite forest campground; **Sonoma** Co., Stewart Point Rd.; **OREGON**, **Benton** Co., Bureau of Land Management, Salem District, Bellfountain Rd.; Corvallis, Peavy Arboretum; Corvallis, Beechwood Place; Beldon Creek; **Linn** Co., Cascadia State Park; **Tillamook** Co., Siuslaw National Forest, Cascade Head Experimental Forest; **Yamhill** Co., 3.5 miles west of Willamina; **WASHINGTON**, **San Juan** Co., Friday Harbor Biological Station; **Jefferson** Co., Chimacum; Olympic National Park, Twin Creeks Natural Area.

**Substrate and habitat:** Found scattered to gregarious at low to mid-elevation under mixed conifers or hardwoods. This taxon is not restricted to old growth.

**Season:** Fruits from September through April.

**References:** WEBER, N.S. 1975. Notes on western species of *Helvella*. I. Beih. Nova Hedwigia 51:25-38.

**NOTES:**



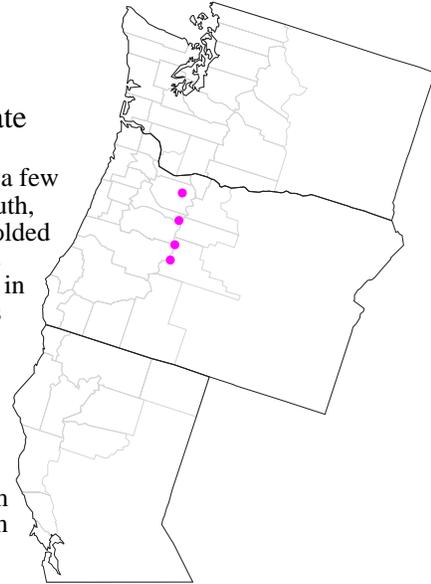
Photo courtesy of Dr. M.A. Castellano

***Hydnotrya inordinata*** Trappe & Castellano, in ed.ROD name *Hydnotrya* sp. nov. # Trappe 787 and 792

Family Discinaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** irregular, convoluted and enfolded with one or a few openings from the interior, 8-30 mm in diam, gray-pink and pubescent in youth, becoming dark red-brown and more or less smooth. **GLEBA** complex, of enfolded tramal plates forming canals and locules 0.5-3 mm broad, trama concolorous with the sporocarp surface or paler, the locules lined with pale pink hymenia in youth, becoming dark red-brown as spores mature, the tips of the paraphyses exceeding the asci and white to pale red-brown, in deteriorating specimens sometimes pale yellow. **ODOR AND TASTE** not distinctive. **ECTAL EXCIPULUM** 40-75  $\mu$ m thick, of hyaline to yellow, globose to ellipsoid cells and obtuse to clavate, emergent hyphal tips 10-38  $\mu$ m in diam, the walls 0.5-2.5  $\mu$ m thick, the cells generally aligned in radiate rows. **ENTAL EXCIPULUM** 40-120  $\mu$ m thick, of hyaline to yellow, interwoven, mostly thin-walled hyphae 5-12  $\mu$ m in diam at the septa, the cells mostly inflated to 8-30  $\mu$ m. **TRAMA** up to 1 mm thick, of tightly interwoven, hyaline, mostly thin-walled hyphae 4-8 (-10)  $\mu$ m in diam at septa, occasional cells inflated to 5-15 (-30)  $\mu$ m. **SUBHYMENIUM** similar to trama except cells generally not inflated. **ASCI** (6-) 8-spored, cylindric, mostly born in a hymenium but many also embedded in the subhymenium, hyaline, straight to sinuous, fragile and mostly breaking under pressure in microscope mounts,  $\pm 300 \times 25-33 \mu$ m with a long-tapered base, the apex rounded, the lateral walls  $\pm 1 \mu$ m thick, the walls immediately below the apex thickened up to 3  $\mu$ m, the apex itself thin-walled and neither pored nor operculate, inamyloid. **PARAPHYSES** crowded, 4-6  $\mu$ m in diam, septate, hyaline, thin-walled, the cells below the tips not or only slightly inflated, the tips clavate and inflated to 5-8 (-10)  $\mu$ m, exceeding the asci by 70-100  $\mu$ m and completely enclosing them. **SPORES** uniseriate, globose to ellipsoid, subhyaline in youth and brown-yellow at maturity, 20-30  $\times$  20-28  $\mu$ m in water excluding ornamentation, 2-5  $\mu$ m larger in KOH mounts, ornamentation of crowded, flexuous, tapered spines 2-3 (-4)  $\times$  0.2-1  $\mu$ m, these sometimes erect and free but more often disorderly and mucilage embedded, aggregated into clusters or collapsed into indistinct mats, young spores often with surface deposits of brown, amorphous material, spore walls  $\pm 1 \mu$ m thick, young spores cyanophilic, mature spores cyanophilic or not.



**Distinguishing Features:** Characterized by small, convoluted to enfolded sporocarps and large spores with disorderly ornamentation.

**Distribution:** Endemic to Oregon. Known from four sites within the range of the northern spotted owl: **OREGON**, **Clackamas** Co., Mount Hood National Forest, Wildcat Mountain Rd.; **Deschutes** Co., Deschutes National Forest, Devils Lake; **Linn** Co., Willamette National Forest, West Lava campground; **Marion** Co., Willamette National Forest, Mount Jefferson Wilderness Area.

**Substrate and habitat:** Sporocarps are usually occur in association with the roots of *Abies amabilis*, *Pinus contorta*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* from 3,200 ft. to 6,000 ft. elevation.

**Season:** Fruits in March, April, and July.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199X. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**



Photo courtesy of Dr. J.M. Trappe

*Hydnotrya subnix* Trappe & Castellano, in ed.ROD name *Hydnotrya subnix* sp. nov. # Trappe 1861

Family Discinaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** irregular to deeply convoluted and enfolded, lacking openings from the interior, 50 x 65 mm in diam, dark red-brown, glabrous to minutely roughened. **GLEBA** complex, of enfolded tramal plates forming canals and locules 1-10 mm broad, concolorous with the sporocarp surface, the canals and locules lined with concolorous hymenia, the tips of the paraphyses exceeding the asci and white to pale red-brown. **ODOR AND TASTE** strongly of spicy garlic. **PERIDIUM** 130-300  $\mu\text{m}$  thick. **ECTAL EXCIPULUM** 40-60  $\mu\text{m}$  thick, a palisade of hyaline, obtuse to clavate, tapered, and irregular emergent hyphal tips 5-15 (-25)  $\mu\text{m}$  in diam, the walls up to 1  $\mu\text{m}$  thick, occasional cells with brown contents. **ENTAL EXCIPULUM** 90-250  $\mu\text{m}$  thick, of hyaline to brown, interwoven to radiate, mostly thin-walled hyphae 5-12  $\mu\text{m}$  in diam at the septa, the cells mostly inflated to 8-30 (-40)  $\mu\text{m}$ , scattered cells and lengths of sparingly septate hyphae with brown contents. **TRAMA** 300-500  $\mu\text{m}$  thick, of tightly interwoven, hyaline, mostly thin-walled hyphae 4-8 (-10)  $\mu\text{m}$  in diam at septa, occasional cells inflated to 5-15 (-30)  $\mu\text{m}$ , scattered cells and lengths of hyphae with brown contents. **SUBHYMENIUM** similar to medullary excipulum except cells generally not inflated. **ASCI** 8-spored, cylindric, mostly born in a hymenium but some also embedded in the subhymenium, hyaline, straight to sinuous, 300-340 x 25-40  $\mu\text{m}$  with a long-tapered base, the apex rounded, the lateral walls  $\pm 0.5$ -1  $\mu\text{m}$  thick, the walls immediately below the apex thickened up to 2  $\mu\text{m}$ , the apex itself thin-walled and neither pored nor operculate, pale yellow in Melzer's reagent. **PARAPHYSES** crowded, 4-6  $\mu\text{m}$  in diam, septate, hyaline, thin-walled, the tips clavate and inflated to 5-8 (-10)  $\mu\text{m}$ , exceeding the asci by 80-130  $\mu\text{m}$  and completely enclosing them. **SPORES** uniseriate, globose to rarely ellipsoid, in KOH brown-yellow in youth, brown at maturity, 23-20  $\mu\text{m}$  in diam excluding ornamentation; ornamentation in youth of minute, crowded, mucilage-embedded spines  $\pm 1$   $\mu\text{m}$  tall, the spines soon covered by an amorphous, brown, irregular, warty partial reticulum 3-5  $\mu\text{m}$  tall, the ridges and warts 0.5-4  $\mu\text{m}$  broad, spore walls  $\pm 1$   $\mu\text{m}$  thick, inamyloid, young spores cyanophilic, older spores varying from cyanophilic to hardly staining.



**Distinguishing Features:** Macroscopically *Hydnotrya subnix* resembles robust specimens of *H. cerebriformis*. However, spores of the former are larger than those of the latter, and the spines become hidden under the mucilaginous reticulum of *H. subnix*, whereas those of *H. cerebriformis* remain prominent and visible at maturity.

**Distribution:** Endemic to Washington. Known from a single site within the range of the northern spotted owl: WASHINGTON, Skamania Co., Gifford Pinchot National Forest, junction of Gumboot Mountain Rd. and Canyon Rd.

**Substrate and habitat:** Sporocarps usually occur in association with the roots of *Abies amabilis* at 3,000 ft. elevation.

**Season:** Fruits in June.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199x. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**

Photo courtesy of Dr. J.M. Trappe

*Hygrophorus caeruleus* MillerROD name *Hygrophorus caeruleus*

Family Hygrophoraceae

Morphological Habit mushroom

**Description:** CAP 50-90 mm broad, moist, glabrous, rimose and cracked, blue to cream colored. FLESH dingy blue-green and cream. GILLS blue-green, waxy. STEM 25-50 x 15-25 mm, tapering abruptly toward base, dry, apex pruinose, innately longitudinally fibrillose below, creamy toward apex, intensifying to blue-green to dirty pale brown below. VEIL absent. ODOR strongly farinaceous. TASTE mild, becoming unpleasant. PILEIPELLIS an ixocutis of thin-walled, hyaline hyphae 2.5-5 µm in diam. GILL TRAMA of parallel hyphae. CLAMP CONNECTIONS abundant. SPORES ellipsoid, (6.5-) 7-9 x 4-5 µm, thin-walled, inamyloid.

**Distinguishing Features:** Characterized by its robust, blue-tinged, gilled mushroom with blue-green, waxy gills, a conspicuous basal rhizomorph and a distinctly farinaceous odor. It fruits near melting snowbanks with Pinaceae. *Hygrophorus canescens* and *H. pallidus* have similar stature and coloration, but have no odor, interwoven gill trama, smaller spores, and different plant associates. *Hygrophorus subviolaceus* is similarly colored but has interwoven lamellar trama, a cap cuticle with narrower (2-3 µm diam) hyphae, and a more fragile, slender stature.

**Distribution:** Endemic to Oregon and Washington. Known from three sites within the range of the northern spotted owl: OREGON, Hood River Co., Mount Hood National Forest, off trail 645; Jefferson Co., Deschutes National Forest, Jack Creek; WASHINGTON, Kittitas Co., Twenty-nine Pines.

**Substrate and habitat:** Occurs in soil in association with roots of Pinaceae spp. near melting snowbanks.

**Season:** Fruits from May through July and possibly fall.

**References:** MILLER, O. K. JR. 1984. A new taxa of *Hygrophorus* from North America. *Mycologia* 76:816-820. LARGENT, D. L. 1985. The Agaricales of California. 5. Hygrophoraceae. Eureka: Mad River Press, Inc. 208 pp.

## NOTES:



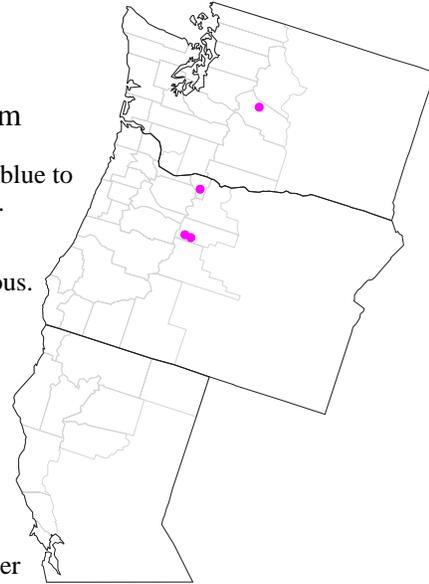
Photo courtesy of Dr. T. O'Dell

Photo courtesy of Dr. T. O'Dell



Photo available only in print version

Photo courtesy of Dr. J.A. Weber



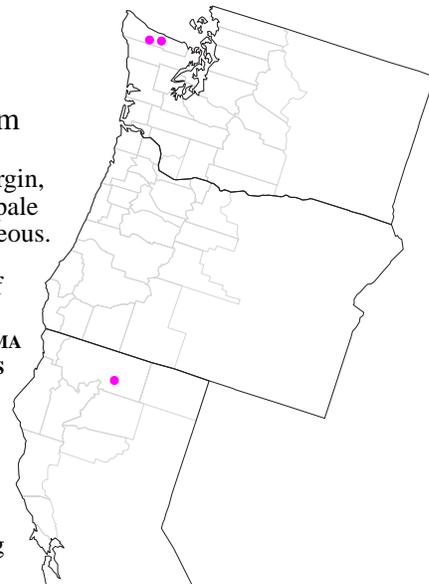
*Hygrophorus vernalis* A.H. SmithROD name *Hygrophorus vernalis*

Family Hygrophoraceae

Morphological Habit mushroom

**Description:** CAP 30-50 mm broad, obtusely umbonate with incurved margin, viscid, moderate yellow-brown when young, becoming tinged with brighter pale vinaceous colors in age. **FLESH** thick, concolorous with cuticle or pale vinaceous. **GILLS** arcuate, becoming long decurrent, white or paler than pileus margin. **STEM** 40-60 x 7-9 mm, equal to slightly bulbous, white, with the thin layer of gluten on the lower portion forming shiny dingy yellow patches. **ODOR AND TASTE** not distinctive. **BASIDIA** 50-70 x 7-11  $\mu\text{m}$ , 2- and 4-spored. **GILL TRAMA** divergent. **PLEUROCYSTIDIA AND CHEILOCYSTIDIA** absent. **CLAMP CONNECTIONS** rare (cuticular hyphae) to relatively common (gill trama). **SPORES** oblong-ellipsoid, 11-15.5 x 5.5-7  $\mu\text{m}$ , smooth, inamyloid.

**Distinguishing Features:** Characterized by a white to yellow-brown, gilled mushroom with a viscid pileus, sordid white gills and stem with a thin glutinous layer on the base. *Hygrophorus variicolor* has a darker cap lacking vinaceous tones and much smaller spores (7-9 x 4.5-5.5  $\mu\text{m}$ ).



**Distribution:** Endemic to California and Washington. Known from three sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Stasta-Trinity National Forest, Panther Creek Meadows; **WASHINGTON**, Clallam Co., Olympic National Park, near Deer Lake; Olympic National Park, Hell Creek; Olympic National Park, near Elwha campground.

**Substrate and habitat:** Occurs in soil in association with roots of Pinaceae spp. near melting snowbanks.

**Season:** Fruits in April through July.

**References:** HESLER, L. R., AND A. H. SMITH. 1963. North American Taxa of *Hygrophorus*. Knoxville: The University of Tennessee Press. LARGENT, D. L. 1985. The Agaricales of California. 5. Hygrophoraceae. Eureka: Mad River Press, Inc. 208 pp.

**NOTES:**

Photo available only in print version

Photo courtesy of University of Michigan  
Photo courtesy of Dr. S.A. Redhead

Photo available only in print version

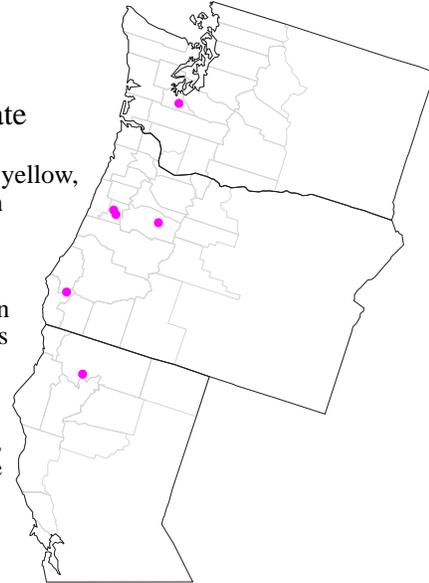
*Leucogaster citrinus* (Harkness) Zeller & DodgeROD name *Leucogaster citrinus*

Family Leucogastraceae

Morphological Habit sequestrate

**Description:** SPOROCARPS up to 20-45 mm, reniform, pale yellow to dark yellow, with 1 to several coarse rhizomorphs emanating from base, concolorous with peridium. KOH on peridium pale brown-pink then brown, ETOH negative, FeSO<sub>4</sub> faintly gray. GLEBA white, trama white, locules spherical, 0.5-3 mm broad, empty, smaller toward peridium. PERIDIUM 60-200 μm thick, of periclinal, compact, pallid yellow hyphae 2-4 μm diam, with a red pigment in KOH. TRAMA 60-80 μm thick, of subparallel, orange, thin-walled, gelatinous hyphae, 2-5 μm in diam. BASIDIOLES 100-125 x 5 μm, claviform, hyaline, thin-walled. APOBASIDIA 100 x 5-7 μm, clavate, 4-spored, thin-walled, sterigmata lacking. SPORES subglobose, 8-11 x (7-) 8-9 μm, including spinose-reticulate ornamentation, hyaline, enclosed in hyaline perispore sac, ornamentation 1-1.5 μm high, 2-2.5 μm apart, spine base 0.2 μm wide, spore wall 1 μm thick, excluding ornamentation.

**Distinguishing Features:** Characterized by its yellow peridium, small spores with tall ornamentation and lack of inflated cells in the trama.



**Distribution:** Endemic to the Pacific Northwest. Known from seven sites within the range of the northern spotted owl: CALIFORNIA, Siskiyou Co., Klamath National Forest, Russian Wilderness Area, near Duck Lake; OREGON, Benton Co., Siuslaw National Forest, north fork of Rock Creek; just south of the Alsea summit on highway 34; Curry Co., Siskiyou National Forest, Wild Rouge Wilderness Area, Upper Stair Creek; Linn Co., Willamette National Forest, Yellow Bottom campground; WASHINGTON, Thurston Co., Fort Lewis Military Reservation, Farley Block, stand 4; Fort Lewis Military Reservation, Stellar Block, stand 3.

**Substrate and habitat:** Found in association with the roots of *Abies lasiocarpa*, *Pinus contorta*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* from 800 ft. to 6,000 ft. elevation.

**Season:** Fruits from August through November.

**References:** ZELLER, S.M., AND DODGE, C.W. 1924. *Leucogaster* and *Leucophleps* in North America. Ann. Mo. Bot. Gard. 11:389-410.

**NOTES:**



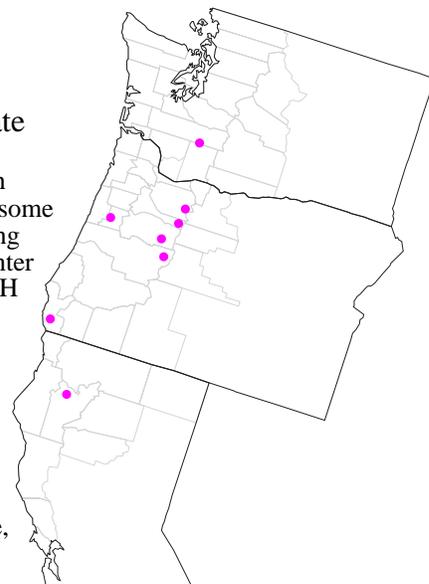
Photo courtesy of Dr. W. Colgan III

*Leucogaster microsporus* Fogel nov. prov.ROD name *Leucogaster microsporus*

Family Leucogastraceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** up to 40 x 50 mm, reniform, base indented with peridial tissue extending to the center of the sporocarp, glabrous, white with some yellow stains, drying pale red. **GLEBA** white, drying pale yellow-pink, exuding white, sticky latex when cut, locules spherical, 0.5-1 mm broad, empty in center of sporocarp, filled with spores next to peridium. **RHIZOMORPHS** absent. **KOH** pale yellow on peridium,  $\text{FeSO}_4$  negative,  $\text{FeSO}_4 + \text{ETOH}$  dull blue-violet. **ODOR** sweet. **PERIDIUM** 100-300  $\mu\text{m}$  thick, of periclinal, pale yellow, thin-walled hyphae, 3-5  $\mu\text{m}$  in diam, cells becoming inflated to 15  $\mu\text{m}$ , some oleiferous, yellow, thin-walled hyphae, outer 60  $\mu\text{m}$  obscured in **KOH** by yellow, amorphous, pigment balls in Melzer's reagent. **TRAMA** 60-125  $\mu\text{m}$  thick, of subparallel, yellow, septate, thin-walled hyphae, 2-3  $\mu\text{m}$  in diam, cells becoming inflated to 10  $\mu\text{m}$ . **BASIDIOLES** 30-35 x 3-4  $\mu\text{m}$ , claviform, thin-walled, hyaline, some encrusted with a hyaline crystalline deposit in **KOH**. **APOBASIDIA** 30-60 x 6-7  $\mu\text{m}$ , claviform, 4-spored, thin-walled, hyaline, sterigmata lacking. **SPORES** subglobose, 6-10 x 5-6  $\mu\text{m}$ , including reticulate ornamentation, enclosed in a hyaline perispore sac, ornamentation of reticulate spines 0.25-0.5  $\mu\text{m}$  high, 2  $\mu\text{m}$  apart, with low connecting lines forming 5-6 sided alveoli.



**Distinguishing Features:** Characterized by its small spores, inflated cells in the peridium and trama, and a rather thick peridium.

**Distribution:** Endemic to Oregon and Washington. Known from eight sites within the range of the northern spotted owl: **CALIFORNIA**, Trinity Co., Castle Crags State Park, Soda Creek; **OREGON**, Benton Co., Siuslaw National Forest, Mary's Peak Rd.; Curry Co., Siskiyou National Forest, Panther Lake, Long term Ecosystem Productivity study site ESLW block; Lane Co., Willamette National Forest, H.J. Andrews Experimental Forest, Stand 11; Linn Co., Willamette National Forest, Sheep Creek Canyon; Marion Co., Mount Hood National Forest, headwaters of Clackamas River, along Cub Creek; Wasco Co., Mount Hood National Forest, near Summit Lake Rd.; **WASHINGTON**, Lewis Co., Gifford Pinchot National Forest, Quartz Creek Big Trees.

**Substrate and habitat:** Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at mid elevation (2,000-3,000 ft.).

**Season:** Fruits from August through November.

**References:** ZELLER, S.M., AND DODGE, C.W. 1924. *Leucogaster* and *Leucophleps* in North America. Ann. Mo. Bot. Gard. 11:389-410.

**NOTES:**

Photo courtesy of Dr. M.A. Castellano

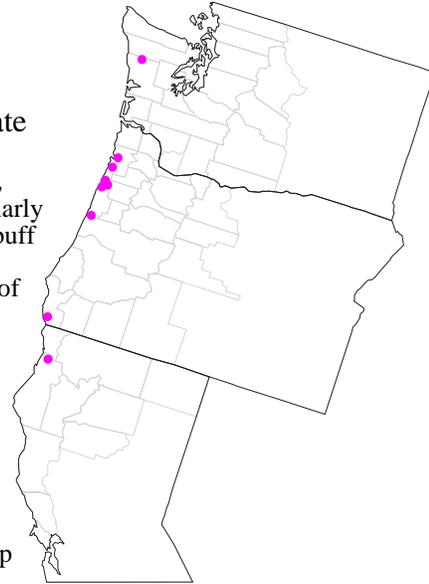
*Macowanites chlorinosmus* A.H. Smith & TrappeROD name *Macowanites chlorinosmus*

Family Russulaceae

Morphological Habit sequestrate

**Description:** CAP 2.5-5.5 cm broad, convex to broadly convex-depressed, surface at least subviscid when wet but soon dry, cutis in age splitting irregularly or merely somewhat rimose, ivory to pallid yellow over marginal area, disc buff to more dingy ochraceous, cutis separable to center. **FLESH** white. **ODOR** of chlorine faint to strong. **TASTE** unpleasant, not acrid. **GLEBA** adnate to apex of stipe, up to 2 cm deep in widest part, sublamellate to labyrinthiform, pale ochraceous when young, becoming orange ochraceous in age. **STEM-COLUMELLA** 1-3 cm long, 6-9 mm thick, equal or nearly so, solid, fragile, white within, surface white to pallid, unchanging on injury, pallid as dried. **FLESH OF PERIDIUM** of heteromerous tissue, the sphaerocysts thin-walled. **PERIDIAL SUBCUTIS** of appressed, interwoven hyphae with occasional greatly inflated isolated cells along the base of the epicuticular turf. **PERIDIAL EPICUTIS** of a compact subgelatinous trichodermium of versiform elements adhering together to form a layer with outlines of individual cells often not clear, the component elements of the hyphae with variously enlarged cells (up to 20  $\mu$ m broad) clavate, cylindric, or fusoid end-cells showing clearly.

**DERMATOPSEUDOCYSTIDIA** scattered to rare. **SUBHYMENIUM** with cells 6-12  $\mu$ m in diam, this area grading imperceptibly into the central area which is composed of inflated cells and appears to be entirely pseudoparenchymatic in sections revived in KOH. **BASIDIA** 23-30 x 9-12  $\mu$ m, clavate, 4-spored, hyaline. **CYSTIDIA** abundant and voluminous, 50-65 x 10-15  $\mu$ m, subclavate-mucronate, cylindric mucronate, or narrowly clavate, with a slight amount of refractive content, walls very thin and cystidia collapsing by late maturity and then hard to demonstrate in KOH mounts. **CLAMP CONNECTIONS** absent. **SPORES** broadly ellipsoid to subglobose, 8-9.5 x 6.5-7.5  $\mu$ , strongly amyloid, ornamentation of small warts 0.3-0.5 (0.8)  $\mu$ m high, clumped or united into small groups but no semblance of a reticulum present.



**Distinguishing Features:** Characterized by the chlorine odor, subgelatinous epicutis of the peridium with its elements forming a distinct layer, a dark brown gleba, and the numerous thin-walled cystidia. *Macowanites chlorinosmus* is distinguished from the similar *Macowanites fulvescens* by its smaller spores.

**Distribution:** Endemic to the Pacific Northwest. Known from nine sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Redwoods State Park, Prairie Creek; **OREGON**, Curry Co., Boardman State Park; Lane Co., Neptune State Park; Lincoln Co., Devils Lake State Park; Tillamook Co., Cape Lookout State Park; Cape Meares State Park; Siuslaw National Forest, Cascade Head Experimental Forest, at summit along old highway 101; Camp Meriweather boy scout camp; **WASHINGTON**, Grays Harbor Co., Olympic National Forest, Willaby Creek, near Rain Forest trail on South Shore Rd.

**Substrate and habitat:** Found in association with the roots of *Picea sitchensis* and *Tsuga heterophylla* below 600 ft. elevation.

**Season:** Fruits in January, July, August, September, October, and November.

**References:** SMITH, A.H. 1963. New astrogastreaeous fungi from the Pacific Northwest. Mycologia 55:421-441.

**NOTES:**

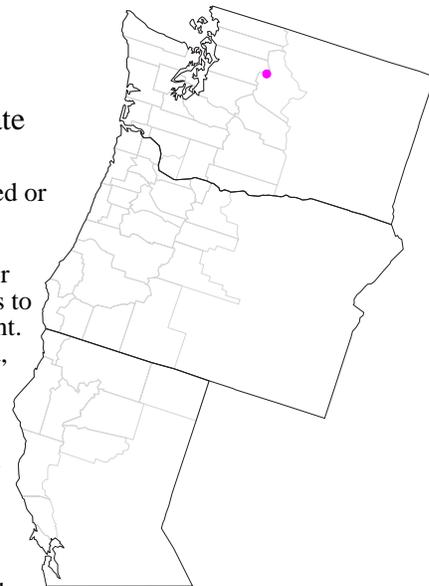
Photo courtesy of Dr. M.A. Castellano

*Macowanites lymanensis* Cázares & TrappeROD name *Macowanites lymanensis*

Family Russulaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 7-23 x 12-36 mm, subglobose to turbinate, lobed or depressed at the center. **PERIDIUM** pale dull yellow with brown stains on cap, white towards margin, glabrous, recurved and often attached to stem but sometimes separated to reveal locules. **GLEBA** loculate, pale orange yellow or slightly yellowed, locules 0.3-1 mm broad. **STEM-COLUMELLA** inconspicuous to prominent, white, percurrent to truncated. **FLESH** white. **RHIZOMORPHS** absent. **ODOR** strongly yeasty. **TASTE** mild. **STEM-COLUMELLA** of hyaline, thin-walled, tightly interwoven hyphae, 2-8  $\mu\text{m}$  in diam, many cells inflated up to 10-20  $\mu\text{m}$  in diam. **PERIDIAL EPICUTIS** 20-70  $\mu\text{m}$  thick, composed of appressed, thin-walled hyphae 2-5  $\mu\text{m}$  in diam, with most cells inflated up to 10-20  $\mu\text{m}$  in diam, pale yellow in KOH and Melzer's reagent, and a subcutis composed of thin-walled, hyaline, inflated cells and sphaerocysts 10-40  $\mu\text{m}$  in diam. **TRAMA** 35-140  $\mu\text{m}$  wide, of thin-walled, hyaline sphaerocysts but occasionally with a central strand of interwoven, thin-walled hyphae 3-6  $\mu\text{m}$  in diam. **SUBHYMENIUM** cellular, 1-3 (-5) cells deep, the cells 10-15 (-20)  $\mu\text{m}$  in diam, hyaline. **BASIDIA** 28-45 x 11-17  $\mu\text{m}$ , thin-walled, clavate, 2-4 spored, hyaline. **CYSTIDIA** absent. **CLAMP CONNECTIONS** absent. **SPORES** globose to subglobose, 7-13 (-17) x 7-12 (-14)  $\mu\text{m}$ , excluding ornamentation, symmetrical, amyloid, ornamentation 1-2  $\mu\text{m}$  tall, of rods or warts, sometimes connected by lines, occasionally partially reticulate.



**Distinguishing Features:** Characterized by the thin peridial epicutis of appressed hyphae, the relatively large spores with ornamentation 1-2  $\mu\text{m}$  tall, consisting of individual rods or warts often connected in lines or forming a partial reticulum, and a total absence of cystidia.

**Distribution:** Endemic to Washington. Known from a single site within the range of the northern spotted owl: **WASHINGTON, Chelan Co.**, Wenatchee National Forest, Glacier Peak Wilderness Area, Lyman Lake, campsite on eastern shore near the inlet of Cloudy Pass Creek.

**Substrate and habitat:** Found in association with the roots of *Abies amabilis* and *A. lasiocarpa* at 5,100 ft. elevation.

**Season:** Fruits in September.

**References:** CÁZARES, E., AND J.M. TRAPPE. 1991. Alpine and subalpine fungi of the Cascade and Olympic Mountains. 2. *Macowanites lymanensis* sp. nov. Mycotaxon 42:333-338.

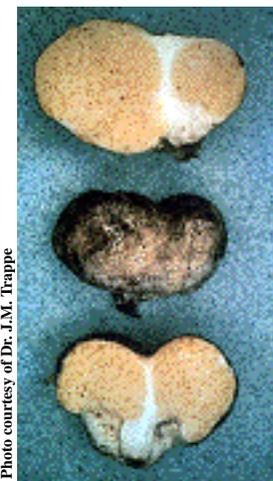
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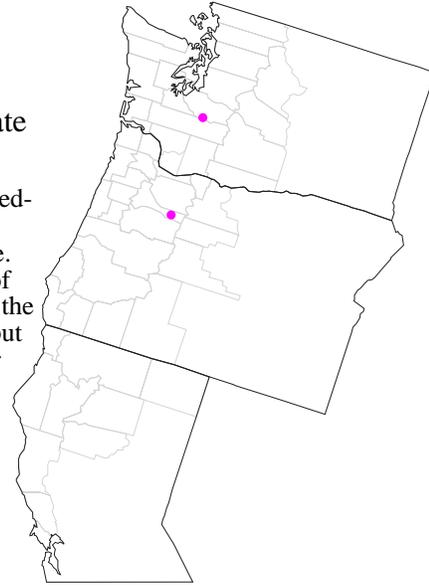
Photo courtesy of Dr. J.M. Trappe

***Macowanites mollis*** A.H. Smith & TrappeROD name *Macowanites mollis*

Family Russulaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 10-30 mm broad, depressed globose to depressed-pileate, surface white, lubricous, drying cinnamon tan. **GLEBA** white to tan. **STEM-COLUMELLA** reduced, percurrent or nearly so, stipe 4-6 x 2-3 mm, white. **PERIDIAL EPICUTIS** of inflated cells 8-15  $\mu\text{m}$  diam. **PERIDIAL SUBCUTIS** a turf of dermatopseudocystidia mixed with somewhat gelatinized, branched hyphae, the turf elements versiform-clavate, contorted, fusoid, capitate-pedicelate, etc., but generally under 30  $\mu\text{m}$  long. Oleiferous hyphae absent. **TRAMA** at first (near margin of peridium) filamentose but at maturity greatly enlarged cells seen scattered throughout. **SUBHYMENIUM** of vesiculose elements which at maturity are 10-18  $\mu\text{m}$  in diam and form a layer 2-3 cells deep. **BASIDIA** 1-2-spored, clavate, 24-33 x 10-13  $\mu\text{m}$ , hyaline, readily collapsing. **BASIDIOLES** numerous. **CYSTIDIA** rare to scattered, 38-56 x 5-8  $\mu\text{m}$ , filamentose-acuminate to narrowly clavate-mucronate, with a small amount of refractive content variously distributed (as seen in KOH). **CLAMP CONNECTIONS** absent. **SPORES** globose, 10-15  $\mu\text{m}$  in diam or subglobose to ellipsoid, 11-14 (-16) x 9.5-13  $\mu\text{m}$ , ornamentation of small spines unconnected or fused in groups of 2-3, 0.6-1  $\mu\text{m}$  high and  $\pm 0.25$   $\mu\text{m}$  broad at base, completely covered with amylaceous material, spore wall thin to slightly thickened.



**Distinguishing Features:** Characterized by its white peridium and much reduced stem, extremely narrow elements of the spore ornamentation, and peridial structure.

**Distribution:** Endemic to Oregon and Washington. Known from two sites within the range of the northern spotted owl: **OREGON, Multnomah Co.**, Columbia Gorge Recreational Area, Larch Mountain; **WASHINGTON, Pierce Co.**, Mount Rainier National Park, Lower Tehoma Creek at junction of Nisqually River. Additional information is needed to ascertain if the two collections from Lower Tehoma Creek may in fact be one site.

**Substrate and habitat:** Found in association with the roots of *Abies grandis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla* above 3,500 ft. elevation.

**Season:** Fruits in July and September.

**References:** PEGLER, D.N., AND T.W.K. YOUNG. 1979. The gastroid Russulales. Trans. Brit. Mycol. Soc. 72:353-388. SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceous fungi. IX. The astrogastraceous series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**

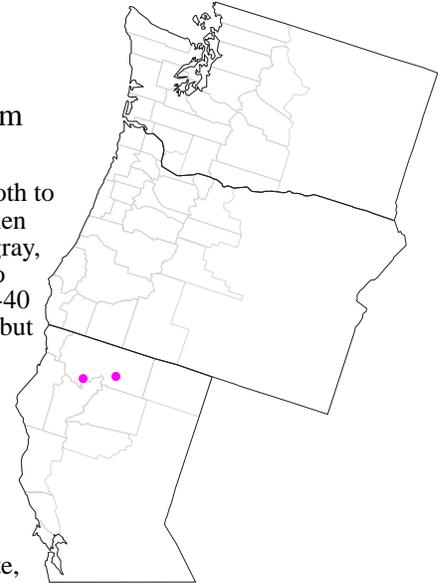
Photo available only in print version

***Marasmius applanatipes*** DesjardinROD name *Marasmius applanatipes*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 10-18 mm diam, convex to plano-convex, surface smooth to rugulose-striate, dry, glabrous, subhygrophanous, dark red-brown overall when young, in age cap becoming dark brown to brown, margin fading to brown-gray, gray-brown, gray-orange or pink-tan. **GILLS** adnate to adnexed, subdistant to distant, broad, at first tan to gray- orange, in age becoming brown. **STEM** 30-40 x 1.5-3 mm, gradually narrowed downward, typically compressed and cleft, but sometimes subcylindric, hollow, pubescent to velutinous overall, non-inisittious, upper half buff to orange-white or brown-orange, lower half brown-gray to dark brown or dark red-brown. **ODOR AND TASTE** strongly garlic-like. **PILEPELLIS** a hymeniform layer of pyriform to broadly clavate erect cells, these ranging from hyaline or pale yellow and thin-walled, to dark brown and thick-walled. **GILL TRAMA** of inamyloid, nongelatinous hyphae. **CAULOCYSTIDIA** clustered, 42-78 x 5.5-9  $\mu$ m, irregularly cylindric, rarely lobed, with moderately thick, hyaline walls. **BASIDIA** 2- and 4-spored. **PLEUROCYSTIDIA** absent. **CHEILOCYSTIDIA** 33-48 x 6-9  $\mu$ m, cylindric to clavate, often bifid or with scattered knobs. **CLAMP CONNECTIONS** present. **SPORES** broadly ellipsoid to amygdaliform, 8.5-10 (-12) x 5-6  $\mu$ m, smooth, hyaline, inamyloid.



**Distinguishing Features:** Characterized by a cap colored red-brown on the disc and brown-gray, gray-brown, gray-orange or pink-tan on the margin; a strong garlic-like odor and taste; a compressed and cleft, entirely pubescent bicolor stem; and growth associated with mixed conifers at elevations above 6,000 ft. Diagnostic microscopic features include: a hymeniform pileipellis of smooth, clavate cells; bifid cheilocystidia; absence of pleurocystidia; inamyloid gill trama; and relatively broad, amygdaliform spores.

**Distribution:** Endemic to California. Known from two sites within the range of the northern spotted owl: **CALIFORNIA, Siskiyou Co.** Shasta-Trinity National Forest, Sand Flat on the flanks of Mount Shasta; **Siskiyou Co.**, Klamath National Forest, Carter Meadows. Two other sites with two collections each are known from Yuba Pass, Sierra Co., California and Placer Co., California (Desjardin 1985). The two populations from outside the assessment area have been heavily logged and this taxon has not been recollected from these areas since.

**Substrate and habitat:** Fruits on conifer litter in forests above 6,000 ft. elevation.

**Season:** Fruits in October.

**References:** DESJARDIN, D.E. 1985. New marasmioid fungi from California. *Mycologia* 77:894-902.

**NOTES:**

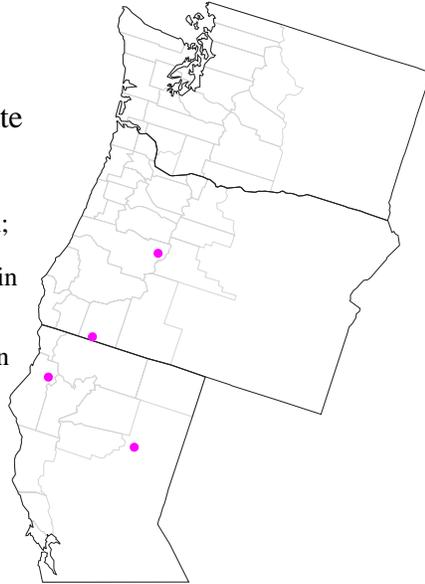
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***Martellia fragrans*** A.H. SmithROD name *Martellia fragrans*

Family Russulaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 1-4.5 cm broad, globose or nearly so, surface glabrous and usually with much dirt adhering, pallid to pale cinnamon brown; FeSO<sub>4</sub> on surface negative, KOH on surface red. **ODOR** vanillia-like. **RHIZOMORPHS** absent. **GLEBA** loculate, white to off white at first then brown in age. **COLUMELLA** absent. **PERIDIAL EPICUTIS** of dermatocystidia 18-27 x 4-8 μm, bluntly fusoid, and many brown to ochraceous in KOH, the layer almost obliterated in old specimens. **PERIDIAL SUBCUTIS** ochraceous to rusty brown in KOH, of interwoven filaments, sphaerocysts absent. **SUBHYMENIUM** of interwoven hyphae 4-8 μm in diam, lacking sphaerocysts. **BASIDIA** 4-spored, clavate, thin-walled, hyaline, 23-38 x 8-11 μm. **CYSTIDIA** in hymenium rare to scattered, filamentose with crooked apices. **SPORES** globose to subglobose, 8-11 x 7.5-10 μm, amyloid, wall slightly thickened, ornamentation as separate rods and spines 0.7-1.5 (-2) μm high, some fused into small groups or lines.



**Distinguishing Features:** Characterized by the vanillia-like odor, brown gleba, spores with rods and spines that are somewhat connected, and the turf of dermatocystidia.

**Distribution:** Also known from Idaho. Known from three sites within the range of the northern spotted owl: **CALIFORNIA, Humboldt Co.**, near Big Hill; **OREGON, Jackson Co.**, Rogue River National Forest, one mile east of Dutchman's Peak along Siskiyou Summit Rd.; **Lane, Co.**, Willamette National Forest, Lamb Butte Scenic Area, Ollalie trail. There are also 3 sites outside the assessment area but on Federal land located on the Swain Mountain Experimental Forest, Lassen National Forest, Plumas Co., California. Not known from Washington.

**Substrate and habitat:** Found in association with the roots of or *Pseudotsuga menziesii* or *Tsuga mertensiana* from 4,500 ft. to 7,500 ft. elevation.

**Season:** Fruits from June through November.

**References:** SMITH, A.H. 1963. New astrogastraceous fungi from the Pacific Northwest. *Mycologia* 55:421-441.

**NOTES:**

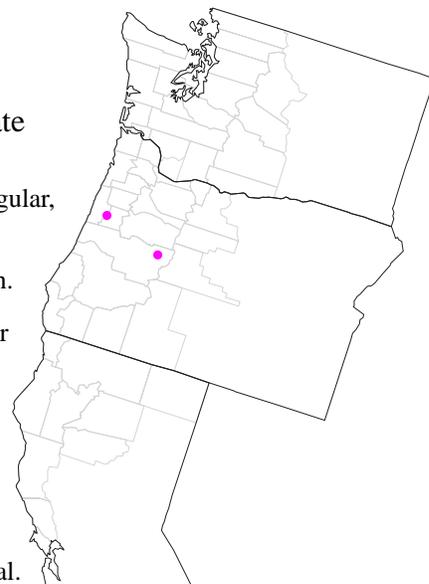
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***Martellia idahoensis* A.H. Smith**ROD name *Martellia idahoensis*

Family Russulaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 8-40 (50) mm broad, globose-depressed or irregular, irregularly ridged or grooved, at first merely wrinkled, with little or no dirt adhering to the surface, white when young, finally pale brown in some areas, rarely overall, drying pallid. GLEBA loculate, white at first, in age pale brown. COLUMELLA poorly developed, when present dendroid. FLESH of peridium white, unchanging. ODOR none. TASTE not recorded. PERIDIAL EPICUTIS over 200  $\mu$  thick consisting of a staggered palisade of hyphae with enlarged cells and ending in clavate end-cells, or these showing irregular proliferations, rarely with narrow or branched elements in the palisade. PERIDIAL SUBCUTIS a layer of nongelatinized, repent, interwoven hyphae with pockets of slightly inflated cells. TRAMA composed entirely of hyaline, subparallel to slightly interwoven hyphae extending. LATICIFEROUS HYPHAE rare, brown in KOH, crooked. SUBHYMENIUM broad, cellular, of large and small sphaerocysts. BASIDIA 29-45 x 11-16  $\mu$ m, clavate, hyaline, (1-) 2-4 spored, sterigmata 5-8  $\mu$ m long, narrowly conic, erect or slightly oblique, straight or nearly so, apical. MACROCYSTIDIA arising from deeper in the tramal tissue than the basidia, 40-50 x 9-10  $\mu$ m, with banded to granular pale yellow content, clavate to subcylindric, obtuse, scattered. LEPTOCYSTIDIA (?) rare, 30-37 x 12-15  $\mu$ m, clavate-mucronate; a second type (76-90 x 9-14  $\mu$ m) present and narrowly clavate, found on fresh material but not demonstrated again from dried material. CLAMP CONNECTIONS absent. SPORES globose to broadly ellipsoid, 10-13 x 9-11.5  $\mu$ m, amyloid, ornamentation echinate to verrucose, 1-1.5 (-2)  $\mu$ m tall, elements unconnected or anastomosing to form compound warts, very few lines or ridges.



**Distinguishing Features:** Characterized by the large, echinate to verrucose spores and the presence of macrocystida.

**Distribution:** Also known from Idaho. Known from two sites within the range of the northern spotted owl: OREGON, Benton Co., Siuslaw National Forest, Mary's Peak campground; Lane Co., Willamette National Forest, Lamb Butte Scenic Area, Ollalie trail. Not known from California or Washington.

**Substrate and habitat:** Found in association with the roots of *Abies amabilis*, *A. lasiocarpa*, *A. procera*, *Picea engelmannii*, and *Tsuga mertensiana* from 3,500 ft. to 5,000 ft. elevation.

**Season:** Fruits from August through October.

**References:** SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceae fungi. IX. The astrogastraceae series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**

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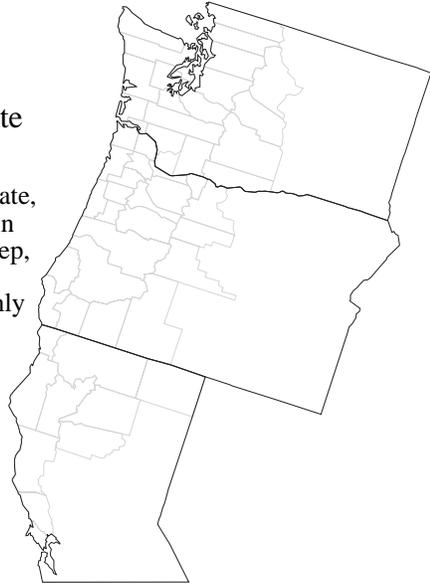
***Martellia maculata*** Singer & A.H. Smith

ROD name *Elaphomyces* sp. nov. # Trappe 1038

Family Russulaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 1-2 cm thick, globose, surface uneven to alveolate, pallid, with brown stains in places. GLEBA pallid but also with brown stains in places. COLUMELLA absent. PERIDIAL EPICUTIS an epithelium several cells deep, the walls hyaline to yellow, smooth, nongelatinous. PERIDIAL SUBCUTIS of interwoven, hyaline, subgelatinous hyphae. TRAMA subgelatinous, hyphae only slightly inflated, hyaline, thin-walled. SPHAEROCYSTS absent. SUBHYMENIUM gelatinous, hyaline, the cells badly collapsed but short and more or less isodiametric. BASIDIA clavate, 20-24 x 10-12  $\mu\text{m}$ , yellow, 2- and 4-spored. BASIDIOLES numerous, yellow. CYSTIDIA absent. CLAMP CONNECTIONS absent. SPORES subglobose to ellipsoid, 10-15 x 8.5-11  $\mu\text{m}$ , wall about 1-1.5  $\mu\text{m}$  thick, in KOH cinnamon-tan in KOH, ornamentation of spines up to 1  $\mu\text{m}$  high and 0.5  $\mu\text{m}$  broad which are amyloid only at the tip or on one side near the tip, smaller amyloid granules also present on the spore surface but for the most part all elements unconnected.



**Distinguishing Features:** Characterized by the cellular peridial epicutis, large spores with unique amyloid reaction and lack of cystidia.

**Distribution:** Endemic to Oregon and Washington. Known from many dozens of locations in western Oregon, and western Washington. It occurs from sea level to high elevation. This taxon was inadvertently added to the list.

**Substrate and habitat:** Found in association with the roots of various Pinaceae from sea level to high elevation.

**Season:** Fruits September through November.

**References:** SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceous fungi. IX. The astrogastraceous series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**

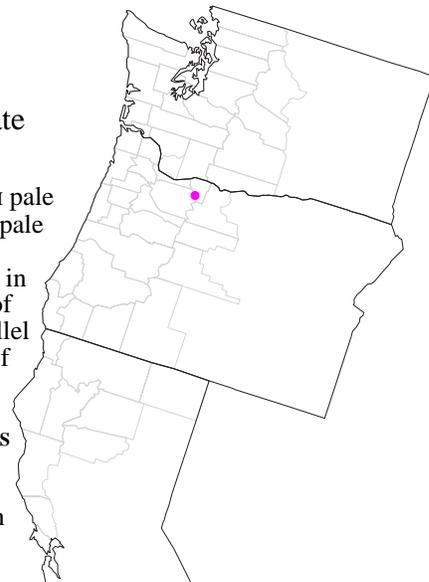
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***Martellia nondistincta*** Trappe & Castellano, in ed.ROD name *Martellia* sp. nov. # Trappe 649

Family Russulaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 4 x 5 cm, subglobose, indented base. PERIDIUM pale tan, slowly turning pale red-brown where handled, smooth. GLEBA loculate, pale brown-yellow. COLUMELLA absent. ODOR of wine. TASTE not recorded. PERIDIAL EPICUTIS 25-50  $\mu\text{m}$  thick, of appressed, thin-walled hyphae 2-4  $\mu\text{m}$  in diam, the cell contents yellow-brown. PERIDIAL SUBCUTIS 75-125  $\mu\text{m}$  thick, of interwoven, hyaline, thin-walled hyphae 2-4  $\mu\text{m}$  in diam. TRAMA of subparallel to interwoven, hyaline, thin-walled hyphae 2-5  $\mu\text{m}$  in diam. SUBHYMENIUM of interwoven, hyaline, thin-walled hyphae 2-5  $\mu\text{m}$  in diam, with occasional cells inflated to 7-12  $\mu\text{m}$ . BASIDIA clavate, 15-30 x 10-15  $\mu\text{m}$ , 1-4 spored, sterigmata  $\pm 6 \times 1 \mu\text{m}$ . CYSTIDIA absent. CLAMP CONNECTIONS absent. SPORES globose, 7-9 (-11)  $\mu\text{m}$  in diam, in KOH hyaline to pale yellow, ornamented with strongly amyloid rods and spines (0.5-) 1-1.5 (-2) x 0.5-1  $\mu\text{m}$ , these often merged in 2's or 3's to form short lines, in places the spore surface with minute amyloid granules.



**Distinguishing Features:** Characterized by the lack of distinctive features. Of the other *Martellia* spp. with small, globose spores (Singer & Smith 1960, Smith 1963), *M. subochracea* Smith and *M. fragrans* Smith both have a peridial epicutis of dermatocystidia, which *M. nondistincta* lacks. *Martellia foetens* Singer & Smith has a spore ornamentation and peridial epicutis similar to that of *M. nondistincta* but has cystidia and a subhymenium of enlarged, isodiametric cells, both lacking in *M. nondistincta*.

**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Clackamas Co., Mount Hood National Forest, Phlox Point.

**Substrate and habitat:** Found in association with the roots of *Abies amabilis* and *Tsuga mertensiana* at 5,500 ft. elevation.

**Season:** Fruits in September.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199x. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**

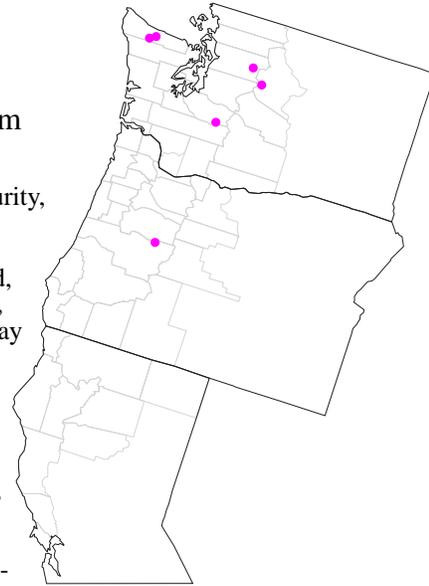
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***Mycena hudsoniana*** A.H. SmithROD name *Mycena hudsoniana*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 20-50 mm diam, obtusely conic to campanulate at maturity, pellucid-striate, nonviscid, glabrous, nearly black or dark gray towards the margin, margin pale gray to white, fading to pale smoky gray overall. **GILLS** ascending-adnate, often with a short decurrent tooth, close, moderately broad, pale smoky gray with paler edge. **STEM** 30-50 x 1.5-3 mm, cylindrical, fragile, hollow, minutely prunose when young, glabrescent, pale gray above, dark gray below, base covered with coarse white fibrils. **ODOR** faintly fragrant. **PILEPELLIS** of repent hyphae 1.5-3.5 µm diam with numerous diverticula, these ranging from wart-like to long and branched. **TRAMA** dextrinoid. **STIPITPELLIS** a cutis of diverticulate hyphae. **BASIDIA** 2-4 spored. **CHEILOCYSTIDIA** numerous, 21-45 x 8-22 µm, clavate to broadly clavate, densely covered with evenly spaced, cylindrical spinulae 1-3.5 x 0.8-1.4 µm, hyaline and less numerous, irregularly shaped, contorted to constricted cells with unevenly spaced, longer and coarser excrescence's. **PLEUROCYSTIDIA** similar to cheilocystidia of type 1. **CLAMP CONNECTIONS** present. **SPORES** pip-shaped, 8-10 x 5-6 µm, smooth, amyloid, white spore print.



**Distinguishing Features:** Characterized by the large, nearly black to dark gray, nonviscid, glabrous, striate cap, the pale smoky gray gills, a gray to dark gray, dry stem, the faintly fragrant (not farinaceous nor raphanoid) odor, the relatively large, pip-shaped, amyloid spores, the distinctive cheilocystidia of two types, broadly clavate, spinulose pleurocystidia, a nongelatinous pileipellis and stipitipellis of diverticulate hyphae.

**Distribution:** Endemic to Oregon and Washington. Known from seven sites within the range of the northern spotted owl: **OREGON, Lane Co.**, Willamette National Forest, H.J. Andrews Experimental Forest, watershed II; **WASHINGTON, Clallam Co.**, Olympic National Park, just below Deer Lake; Olympic National Park, Boulder Lake trail; **King Co.**, Wenatchee National Forest, Smith Brook Rd. , near Steven's Pass; **Lewis Co.**, Mount Rainier National Park, Reflection Lakes; Mount Rainier National Park, Narada Falls; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Barlow Pass, south fork of the Sauk River.

**Substrate and habitat:** Restricted to conifer forests and usually found on woody debris or duff near snow banks above 700 m elevation.

**Season:** Fruits from April through July.

**References:** SMITH, A.H. 1947. North American species of *Mycena*. University of Michigan Press, Ann Arbor. 521 pp.

**NOTES:**

Photo available only in print version

Photo courtesy of University of Michigan  
Photo courtesy of Dr. S.A. Redhead

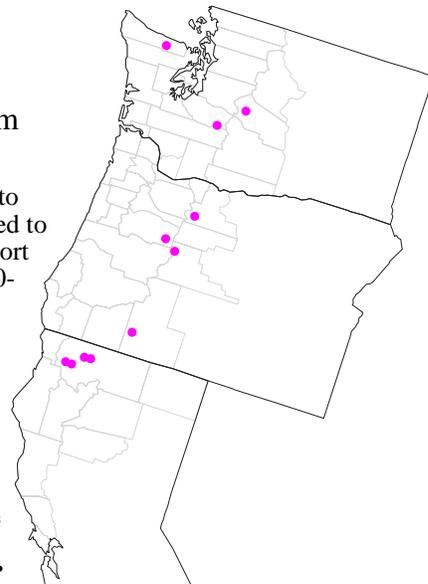
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***Mycena monticola* A.H. Smith**ROD name *Mycena monticola*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 10-30 mm diam, conic to campanulate, pellucid-striate to slightly sulcate, nonviscid, hygrophanous, glabrous, disc red, margin flame red to pink-red, fading to pink at maturity. **GILLS** ascending-adnate, often with a short decurrent tooth, close, broad, white to pink with concolorous edges. **STEM** 40-75 x 1-2.5 mm, cylindric, prunose at apex, glabrous elsewhere, base covered with coarse white fibrils, pink overall at first, turning dingy brown from the base upwards in age. **ODOR AND TASTE** not distinctive. **PILEIPELLIS** of repent hyphae 2-3.5  $\mu\text{m}$  in diam, covered with simple to branched diverticula 2-23  $\mu\text{m}$  long, these often in dense clusters. **HYPODERMIVM** of dextrinoid hyphae inflated up to 45  $\mu\text{m}$  in diam. **STIPITPELLIS** a layer of repent hyphae with scattered diverticula 1-10  $\mu\text{m}$  long, and terminal cells similar to cheilocystidia but smaller. **BASIDIA** 4-spored. **CHEILOCYSTIDIA** 14.5-35 (-49) x 4.5-18  $\mu\text{m}$ , forming a sterile band on lamellae edge, subcylindric to clavate or irregular in outline with fairly numerous, unevenly spaced, simple to branched diverticula 5-18  $\mu\text{m}$  long, hyaline. **PLEUROCYSTIDIA** absent. **CLAMP CONNECTIONS** present. **SPORES** pip-shaped, 8-10.5 x 5-5.8  $\mu\text{m}$ , smooth, weakly amyloid, white spore print.



**Distinguishing Features:** Characterized by a cap that is red on the disc and pink on the margin (dries pink overall), has white to pale pink, nonmarginate lamellae, and a stem that is initially pink overall but becomes brown from the base upwards through maturation and handling. Microscopically, pleurocystidia are absent, the cheilocystidia are covered apically with numerous, fine, relatively long branched diverticula, the pileipellis is composed of cylindric, nongelatinous hyphae with numerous fine, branched diverticula, and the stipitpellis is composed of sparsely diverticulate hyphae.

**Distribution:** Endemic to the Pacific Northwest. Known from ten sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, trail to Haypress Meadows; Klamath National Forest, Marble Mountain Wilderness Area, Stansha trail; Klamath National Forest, Canyon Creek trail; **OREGON**, Deschutes Co., Willamette National Forest, McKenzie Pass; **Klamath Co.**, Winema National Forest, near Lake of the Woods; **Linn Co.**, Willamette National Forest, Lost Prairie campground; **Wasco Co.**, Mount Hood National Forest, Bear Springs campground; **WASHINGTON**, Clallam Co., Olympic National Park, Hurricane Ridge; **Kittitas Co.**, Wenatchee National Forest, Kachess campground; **Lewis Co.**, Mount Rainier National Park, Reflection Lakes.

**Substrate and habitat:** Restricted to conifer forests above 3,000 ft. elevation, particularly those with *Pinus* spp. and usually found in gregarious, caespitose clusters in duff.

**Season:** Fruits from August through November and also in March.

**References:** SMITH, A.H. 1947. North American species of *Mycena*. University of Michigan Press, Ann Arbor. 521 pp.

**NOTES:**

Photo available only in print version

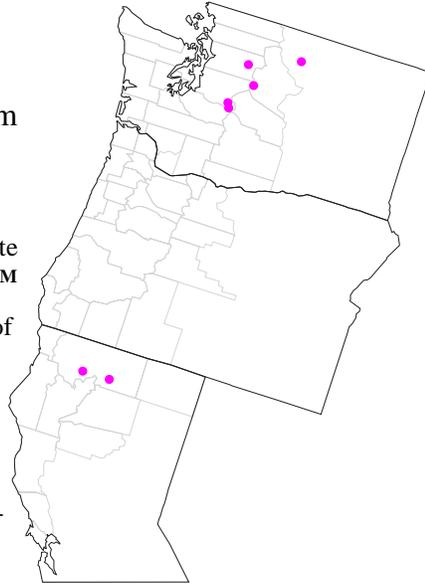
Photo courtesy of University of Michigan  
Photo courtesy of Dr. T. O'Dell

***Mycena overholtsii*** A.H. Smith & SolheimROD name *Mycena overholtsii*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 20-50 mm diam, convex, becoming plano-convex and pellucid-striate in age, subhygrophanous, glabrous, sooty gray when young, fading in age to pale gray, margin becoming gray-white. GILLS broadly adnate to subdecurrent, broad, white to pale gray, often staining yellow or gray. STEM 40-100 x 2-6 mm, cylindric or enlarged and connate at the base, terete or compressed, puberulous to glabrous above, base covered with a dense layer of white to tan downy tomentum, apex white to tan, base concolorous but becoming dingy red-brown under the tomentum in age. ODOR yeast-like. TASTE mild. PILEPELLIS an ixocutis of repent hyphae 1.5-3.5  $\mu\text{m}$  diam, smooth or with a few scattered simple diverticula, embedded in a gelatinous matrix. PILEUS TRAMA dextrinoid. STIPITPELLIS a layer of repent smooth (or with few scattered diverticula) hyphae, with irregularly cylindric and often lobed terminal cells occurring in dense tufts and curving outward. BASIDIA 4-spored. CHEILOCYSTIDIA (30-) 45-65 x 2-5.5 (-8)  $\mu\text{m}$ , scattered, subcylindric to subfusoid, smooth, hyaline. PLEUROCYSTIDIA uncommon, similar to cheilocystidia. CLAMP CONNECTIONS present. SPORES narrowly pip-shaped, 6-7.5 x 3-4.5  $\mu\text{m}$ , smooth, amyloid, white spore print.



**Distinguishing Features:** Characterized by forming some of the largest sporocarps of any *Mycena*, with caps up to 50 mm in diameter and a stem up to 100 mm long. It forms a dark gray cap that fades to pale gray in age and with exposure, gills that are white to pale gray and often subdecurrent, and a pallid stem that has the lower half covered in downy white to tan tomentum.

**Distribution:** Also known from Wyoming. Known from seven sites within the range of the northern spotted owl; CALIFORNIA, Siskiyou Co., Mount Shasta, near Horse Camp; Klamath National Forest, Russian Wilderness Area, near Sugar Lake; WASHINGTON, Chelan Co., Wenatchee National Forest, Steven's Pass; Pierce Co., Mount Rainier National Park, along Kotsuck Creek; Mount Rainier National Park, Ghost Lake; Mount Rainier National Park, Yakima Park rd. below Sunrise Point; Snohomish Co., Mount Baker-Snoqualmie National Forest, Barlow Pass. It is also found outside the assessment area on the Okanogan National Forest in Washington. Not known from Oregon.

**Substrate and habitat:** Restricted to conifer forests above 3,000 ft. elevation, particularly those with *Abies* spp. and usually found in gregarious, caespitose clusters on decayed wood near snow banks or just after snow melt.

**Season:** Fruits from March through July.

**References:** SMITH, A.H. 1947. North American species of *Mycena*. University of Michigan Press, Ann Arbor. 521 p.

**NOTES:**

Photo available only in print version

Photo courtesy of Dr. M. Reing  
Photo courtesy of S. Trudell

Photo available only in print version

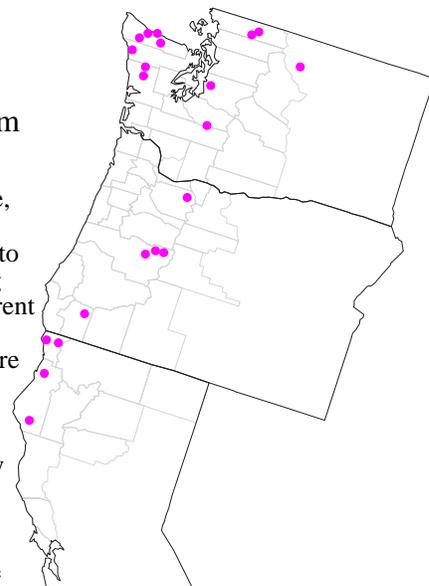
## *Mycena quinaultensis* Kauffman

**ROD name** *Mycena quinaultensis*

**Family** Tricholomataceae

**Morphological Habit** mushroom

**Description:** CAP 10-25 (-40) mm in diam, obtusely conic to campanulate, becoming obtusely umbonate and often with a small papilla on top of umbo, wrinkled, pellucid-striate to sulcate, surface glabrous, viscid, entirely brown to black when young, disc remaining so or fading slightly in age, margin fading through brown to pale brown. **GILLS** ascending-adnate or with a short decurrent tooth, subdistant to distant, brown, white at first then gray in age with concolorous edges. **STEM** 40-70 x 1.5-3 mm, cylindrical, finely prunose or more commonly glabrous, base with coarse white fibrils, viscid, brown to pale brown overall. **ODOR AND TASTE** not distinctive. **PILEIPELLIS** an ixocutis of repent, smooth hyphae 2-4.5  $\mu\text{m}$  diam, embedded in a gelatinous matrix. **TRAMA** inamyloid. **STIPITPELLIS** similar to the pileipellis with curved, poorly differentiated terminal cells. **BASIDIA** 4-spored. **CHEILOCYSTIDIA AND PLEUROCYSTIDIA** conspicuous, 58-95 x 10-18  $\mu\text{m}$  (centrally), fusiform to subcylindric, frequently long-pedicellate, hyaline. **CLAMP CONNECTIONS** present. **SPORES** pip-shaped, 8-9.5 x 4.5-5  $\mu\text{m}$ , smooth, amyloid, white spore print.



**Distinguishing Features:** Characterized by forming obtusely umbonate, sulcate to wrinkled, viscid caps colored brown to black on the disc with pale brown margins, white lamellae that are ascending-adnate, and a viscid, brown stem covered on the base with white fibrils. Microscopically, the pleurocystidia and cheilocystidia are fusiform to subcylindric and quite large, pileipellis and stipitipellis hyphae are nondiverticulate, and the pileus and lamellar trama are nondextrinoid (an unusual feature in *Mycena*).

**Distribution:** Endemic to the Pacific Northwest. Known from twenty-one sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Six Rivers National Forest, Patrick Creek; **Humboldt Co.**, near Orick; Humboldt Redwoods State Park; **OREGON**, Clackamas Co., Mount Hood National Forest, Still Creek; Mount Hood National Forest, near Rhododendron; **Josephine Co.**, near Grants Pass; **Lane Co.**, Willamette National Forest, near McKenzie Bridge; near Blue River; **WASHINGTON**, Clallam Co., Crescent Beach; Olympic National Forest, Klahanie campground; Olympic National Forest, Quinault Lake; Olympic National Park, near Quinault Lake; Olympic National Park, lower Soleduc River; Olympic National Park, Lake Mills; **Grays Harbor Co.**, Olympic National Forest, Quinault Research Natural Area; **Jefferson Co.**, Olympic National Park, Hoh River; **King Co.**, Schmitz Park; **Pierce Co.**, Mount Rainier National Park, lower Tahoma Creek; **Okanogan Co.**, Okanogan National Forest, near Wolf Creek; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, Shuksan Arm; Mount Baker-Snoqualmie National Forest, Baker Lake.

**Substrate and habitat:** Found in gregarious, caespitose clusters on senescent conifer needles or uncommonly on decayed wood in conifer forests.

**Season:** Fruits from late May through December.

**References:** SMITH, A.H. 1947. North American species of *Mycena*. University of Michigan Press, Ann Arbor. 521 pp.

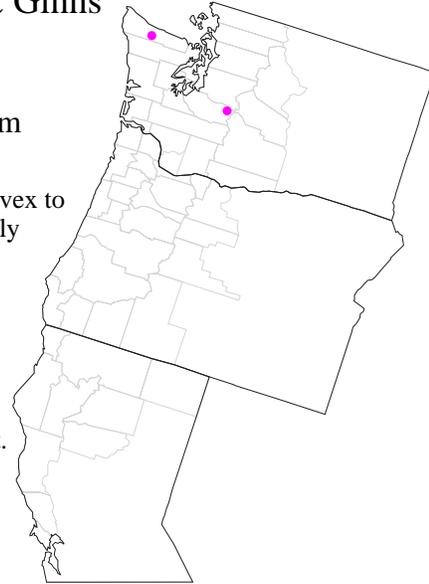
**NOTES:**

***Neolentinus adhaerens*** (Alb. & Schw.:Fr.) Redhead & GinnsROD name *Neolentinus adherens*

Family Lentinaceae

Morphological Habit mushroom

**Description:** CAP 20-50 mm in diam, slightly depressed or umbonate convex to applanate, viscid in patches, pale gray-brown to dark yellow-red-brown, finely scaly, progressively covered with an amber resin which darkens and hardens with age. **FLESH** tough, beige. **GILLS** subdistant with smooth to uneven flocculose edges, pale brown. **STIPE** 30-70 x 6-16 mm, central to eccentric, hirsute-tomentose at apex, becoming glabrous at base, pale yellow-brown darkening to dark gray-brown at clavate base. **ODOR** pleasant. **TASTE** bitter, astringent. **GILL TRAMA** parallel. **PLEUROCYSTIDIA** 60-125  $\mu$ m, lageniform, thin- to slightly thick-walled. **CHEILOCYSTIDIA** to 150  $\mu$ m long, filiform to subclavate, frequently in bundles, covered with a yellow, encrusting pigment. **CLAMP CONNECTIONS** present. **SPORES** cylindrical to bacilliform, 7-10.5 (-11.5) x 3-3.5  $\mu$ m, inamyloid.



**Distinguishing Features:** Characterized by pale gray-brown to dark yellow-red-brown cap with subdistant, finely fimbriate, pale brown gills, the entire mushroom gradually covered by a red-brown resinous coating. *Neolentinus kauffmanii* (Smith) Redhead & Ginns has a red-brown cast when dried, does not secrete a red-brown resinous coating, and has more crowded, more fimbriate gills, and smaller, shorter spores (4.5 -6.7 x 2.5-3.5  $\mu$ m).

**Distribution:** Also known from Europe. Known from a single site within the range of the northern spotted owl: **WASHINGTON, Clallam Co.**, Olympic National Park, Soleduc Falls trail. Another collection is listed from the Dalles Recreational Area in Pierce Co., Washington but without specific locality information.

**Substrate and habitat:** Saprophytic on conifer logs.

**Season:** Fruits in October and November.

**References:** REDHEAD, S. A., AND J. H. GINNS. 1985. A reappraisal of agaric genera associated with brown rots of wood. *Trans. Mycol. Soc. Japan* 26:349-381.

**NOTES:**

Photo courtesy of Dr. G. Barron  
Photo courtesy of Dr. S.A. Redhead

Photo available only in print version

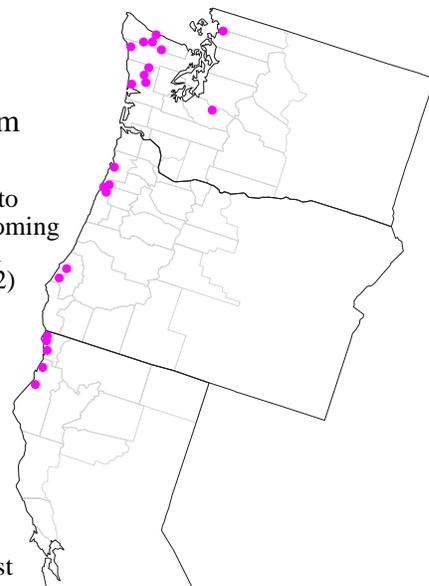
*Neolentinus kauffmanii* (Smith) Redhead & GinnsROD name *Neolentinus kauffmanii*

Family Lentinaceae

Morphological Habit mushroom

**Description:** CAP 22-45 (-80) mm in diam, convex to applanate, prunose to glabrous, dry (but can be tacky), white to pale pink-yellow or vinaceous becoming dull tan in age. **FLESH** tough, pale pink-tan. **GILLS** moderately crowded with uneven denticulate edges, white or pale pink-tan. **STEM** 10-30 (-60) x 2-5 (12) mm, usually curved and eccentric, hirsute-tomentose at apex, becoming glabrous at base, concolorous with cap. **ODOR** not distinctive. **TASTE** bitter, then acid. **GILL TRAMA** parallel. **PLEUROCYSTIDIA** 60-100 x 7-12  $\mu$ m, lanceolate to ventricose fusoid with a rounded apex, **CHELOCYSTIDIA** to 125  $\mu$ m long, similar to pleurocystidia in shape. **CLAMP CONNECTIONS** present. **SPORES** cylindrical, 4.5 -6.7 x (2-) 2.5-3 (-3.5)  $\mu$ m, inamyloid.

**Distinguishing Features:** Characterized by a pale-pink to pink-tan tricholomatoid mushroom on *Picea sitchensis* logs with crowded denticulate gills. *Neolentinus adhaerens* secretes a red-brown resin, has a gray dingy cast when dried, less crowded gills and longer spores (7-11 x 3-3.5  $\mu$ m).



**Distribution:** Endemic to the Pacific Northwest. Known from twenty-three sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Fort Dick; Jedediah Smith State Park, Rugg Grove; near Klamath, Wilson Creek rd.; **Humboldt Co.**, Redwood National Park, Fern Canyon near mouth west of spillway; Patrick's Point State Park; **OREGON**, Coos Co., Beaver Hill Forest; north Bandon; **Lincoln Co.**, Siuslaw National Forest, Cascade Head; Van Duzer Wayside; Siuslaw National Forest, Otis; **Tillamook Co.**, Cape Meares State Park; Siuslaw National Forest, Cascade Head Experimental Forest, Neskowin Creek campground; **WASHINGTON**, **Clallam Co.**, Olympic National Park, Whiskey Creek Beach; Olympic National Park, Soleduc Falls trail; **Gray's Harbor Co.**, Lake Quinault, North Rd.; Quinault Research Natural Area; Humptulips; **Jefferson Co.**, Olympic National Park, Hoh River trail; Olympic National Park, West Twin Creek Research Natural Area; 5 miles south of Lake Quinault on South Rd.; **Pierce Co.**, Buckley crossroads; near Copalis Beach, the Pines; **Skagit Co.**, Alger Bog.

**Substrate and habitat:** Saprophytic, causing brown pocket rot in *Picea sitchensis*.

**Season:** Fruits throughout the year.

**References:** REDHEAD, S. A., AND J. H. GINNS. 1985. A reappraisal of agaric genera associated with brown rots of wood. Trans. Mycol. Soc. Japan 26:349-381.

**NOTES:**



Photo courtesy of E. Butler  
Photo courtesy of M. Seidl

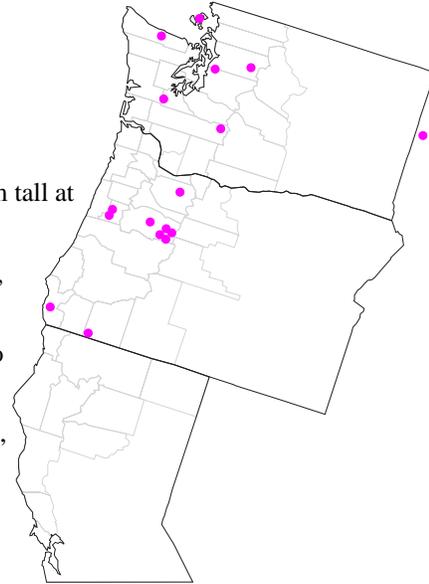


*Neournula pouchetii* (Berthet & Rioussel) PadenROD name *Neournula pouchetii*

Family Sarcosomataceae

Morphological Habit cup

**Description:** SPOROCARPS sessile to short stipitate apothecia, to 40 mm tall at maturity, when very young clavate, hollow in upper portion, expanding and spreading to urnulate or margin splitting and spreading in age, from above regular, 20-30 mm in diam. **HYMENIAL SURFACE** varying from pale pink-gray, gray touched with purple, or dingy pink before exposure to gray at maturity, even to slightly irregular. **ABHYMENIAL SURFACE** at first nearly white to very pale gray, darkening to brown-gray to gray in age, discoloring on handling to brown or brown-black, when fresh with a pale gray felted layer, paler to nearly white at the base. **STEM** expanding smoothly or more or less distinct, rounded in cross section, paler than the abhymenial surface. **ASCI** operculate, inamyloid, relatively thick-walled, base narrow and curving. **SPORES** subcylindric to obscurely fusoid, the majority narrowly ellipsoid, 23-32 x 8-10.5 µm, ornamented with low random ridges and warts.



**Distinguishing Features:** Characterized by a sessile to stipitate sporocarp, which when young is hollow and club-shaped, it expands to become urn-shaped or irregularly split. The hymenium is dingy pink, pale pink-gray, gray tinged with purple, or gray; the abhymenial surface is white to pale gray or brown. Typically the stem is immersed in soil, litter or duff and is round in cross section with basal rhizomorphs. *Urula craterium* (Schwein. : Fr.) Fr. differs in having dark gray urn-shaped sporocarps, appears to be associated with *Quercus*, and has smooth spores 25-25 x 12-14 µm.

**Distribution:** Also known from Idaho. Known from sixteen sites within the range of the northern spotted owl: **OREGON**, **Benton Co.**, Woods Creek rd. at gate junction; Siuslaw National Forest, milepost 50.8 on hwy. 34 near Mary's Peak Rd.; **Clackamas Co.**, Bureau of Land management (BLM), Salem District, Cascades Resource Area, north of 3-53-4 Rd.; **Curry Co.**, Umpqua National Forest, Pistol River; Siskiyou National Forest, Fairview Mountain; **Jackson Co.**, Rogue River National Forest, Seattle trailhead; **Lane Co.**, H.J. Andrews Experimental Forest, Stand L202.; **Linn Co.**, BLM, Salem District, Cascades Resource Area, near Trout Creek; Willamette National Forest, Iron Mountain, 1/4 mile from trailhead; Willamette National Forest, 1 mile west of Lost Prairie campground; Willamette National Forest, Tombstone Pass; Willamette National Forest, H.J. Andrews Experimental Forest, Carpenter Mountain; **WASHINGTON**, **Clallam Co.**, Olympic National Park, Elwha campground loop trail; **Lewis Co.**, Mount Rainier National Park, along State hwy. 123, 4 miles north of hwy. 12; **San Juan Co.**, Friday Harbor Lake, near Beaverton Valley; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, above Monte Cristo campground; **Thurston Co.**, Capitol State Forest, 3.5 miles up D2000 Rd. from Sherman Valley campground.

**Substrate and habitat:** Fruits in conifer stands ranging from about 35 to over 200 years old.

**Season:** Fruits from March through July.

**References:** PADEN, J.W., AND E.E. TYLUTKI. 1968[1969]. Idaho Discomycetes. I. A new genus of the Sarcoscyphaceae. *Mycologia* 60:1160-1168.

**NOTES:**

Photo available only in print version

Photo courtesy of Dr. M. Beng  
Photo courtesy of Dr. T. O'Dell



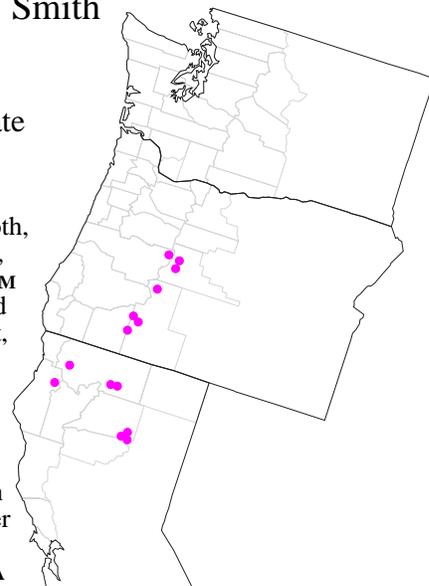
*Nivatogastrium nubigenum* (Harkness) Singer & A.H. SmithROD name *Nivatogastrium nubigenum*

Family Strophariaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 10-24 mm broad, 15-40 mm tall, subglobose to truncate, margin abruptly decurved, rarely umbonate, surface glabrous, smooth, somewhat viscid, evenly ochraceous or with streaks or darker areas of tawny, fading to white in age. **GLEBA** loculate to sublamellate, pale red-brown. **STEM** 5-25 mm long, 5-12 mm thick, equal to somewhat bulbous, somewhat matted fibrillose, dry and unpolished, solid or rarely tubular. **COLUMELLA** percurrent, solid, white. **VEIL** white or off-white, cortina-like, causing the margin of the peridium and the apex of the stipe to be silky-shining in age, evanescent.

**ODOR** fragrant sweet. **TASTE** mild. **PERIDIAL EPICUTIS** of gelatinous, narrow, interwoven, hyaline hyphae. **PERIDIAL SUBCUTIS** of subparallel, thin-walled, irregularly enlarged hyphae, up to 12 µm in diam. **VEIL** consisting of slightly gelatinized hyphae. **FLESH** of stem and columella of interwoven hyphae with cells up to 25 µm in diam, hyphae in the columella hyaline, those in the lower portion of the stem colored, throughout, both structures loosely arranged, nongelatinized. All hyphae inamyloid. **CLAMP CONNECTIONS** present. **TRAMA** of regularly arranged, subhyaline to yellow, interwoven hyphae, some cells irregularly enlarged. **SUBHYMENTUM** up to 50 µm thick, of inflated to subsodiametric cells 10-25 (-33) x 8-18.5 (-25) µm, interior to this layer occurs a layer of somewhat gelatinized hyphae, up to 15 µm in diam. **BASIDIA** 17-21 x 6-8.2 µm, hyaline, clavate, 2-4-spored. **BASIDIOLES** common, vesiculose, about 16 x 12.5 µm. **CYSTIDIA** 60-100 x 15-25 µm, pale brown-yellow to brown, thin-walled, fusoid-ventricose, the neck long and in optical section with undulating walls, the apex obtuse to subacute. **SPORES** ellipsoid, (3-) 7.5-9 (-12) x (3-) 5.5-6.3 µm, smooth, asymmetrical, germ pore present, apex not truncate, thick-walled, golden ochraceous to honey colored, inamyloid.



**Distinguishing Features:** Characterized by its agaricoid, sweet-smelling sporocarps and inamyloid, honey colored spores which possess a germ pore.

**Distribution:** Endemic to California and Oregon. Known from thirteen sites within the range of the northern spotted owl: **CALIFORNIA**, **Siskiyou** Co., Klamath National Forest, Marble Mountain Wilderness Area, English Peak; Mount Shasta, Horse camp; Shasta-Trinity National Forest, Bunny Flat; Shasta-Trinity National Forest, Sand Flats; Shasta-Trinity National Forest, Panther Meadow; Shasta-Trinity National Forest, Red Butte; **OREGON**, **Deschutes** Co., Deschutes National Forest, Tumalo Mountain trail; Deschutes National Forest, Three Creeks Lake; Deschutes National Forest, Odell Butte; **Klamath** Co., Crater Lake National Park, below Goodbye Creek campground; Crater Lake National Park, Mazama campground; Crater Lake National Park, Lost Pond; **Lane** Co., Willamette National Forest, near McKenzie Pass, Frog Camp. There are also 5 sites outside the assessment area located in Lassen Volcanic National Park in California.

**Substrate and habitat:** Fruits on the surface of rotten *Abies* logs at high elevation (above 4,000 ft.).

**Season:** Fruits from May through early October.

**References:** SINGER, R. AND SMITH, A.H. 1959. Studies on secotiaceous fungi - V. *Nivatogastrium* gen. nov. Brittonia 11:224-228.

**NOTES:**

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Photo courtesy of S. Trudell  
Photo courtesy of Dr. J.A. Weber

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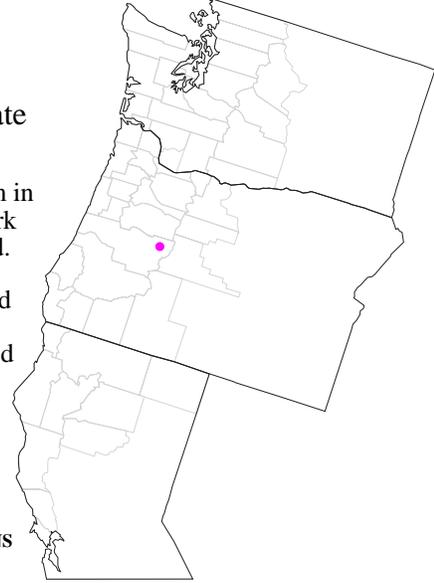
*Octavianina cyanescens* Trappe & Castellano, in ed.

ROD name *Octavianina* sp. nov. # Trappe 7502

Family Octavianinaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** subglobose to more or less flattened, 12-25 mm in diam, felty, yellow-white to pale yellow, in places with a scant overlay of dark brown fibrils, overnight collection developing dark blue stains where bruised. **RHIZOMORPHS** lacking. **GLEBA** loculate, moist, dark gray-brown to brown-black, with gray tramal plates separating minute, rounded, mostly spore-filled locules. **ODOR** not distinctive. **TASTE** not recorded. **PERIDIUM** 150-300  $\mu\text{m}$  thick. **PERIDIAL EPICUTIS** a narrow layer of appressed, pale brown, thin-walled hyphae 2-7  $\mu\text{m}$  in diam, occasional cells inflated to 5-10  $\mu\text{m}$ . **PERIDIAL SUBCUTIS** with pale brown, thin-walled hyphae near the epicutis grading to hyaline near the gleba, 2-6  $\mu\text{m}$  in diam but commonly inflated to 10-30  $\mu\text{m}$ . **TRAMA** of hyaline, thin-walled hyphae 2-4  $\mu\text{m}$  in diam, the cells often inflated to 4-8  $\mu\text{m}$ . **SUBHYMENIUM** of hyaline, thin-walled, more or less isodiametric cells 5-10  $\mu\text{m}$  in diam. **BASIDIA** clavate, hyaline, thin-walled, 30-35 x 11-14  $\mu\text{m}$ , sterigmata up to 5-7 x 1.5-2 (-3)  $\mu\text{m}$ . **CLAMP CONNECTIONS** absent. **SPORES** globose to occasionally broadly ellipsoid, 13-18 (-20)  $\mu\text{m}$  in diam excluding the ornamentation of subangular cones (3-) 4-5 (-7) x 1-6  $\mu\text{m}$  in KOH, 2-4 x 1-6  $\mu\text{m}$  in water, with occasional interspersed spines and smaller cones, all cones composed of agglutinated spines and forming 4-7 sided polygons at the base, dark brown, sterigmata often remaining attached as an inconspicuous pedicel, in Melzer's reagent spore walls deep orange red, ornamentation hyaline and only 2-4  $\mu\text{m}$  tall, heated in cotton blue the spines forming the cones separating and becoming erect, 4-8 x 1.5-3  $\mu\text{m}$ .



**Distinguishing Features:** Characterized by the bluing reaction of the peridium and its relatively darkly pigmented spores with tall spore ornamentation.

**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Lane Co., Willamette National Forest, English Mountain, above The Potholes.

**Substrate and habitat:** Found with *Tsuga mertensiana* at 5,700 ft. elevation.

**Season:** Fruits in September.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199X. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**

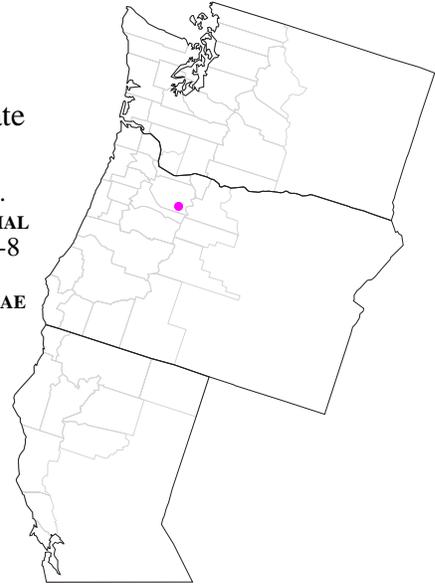
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***Octavianina macrospora*** Singer & A.H. SmithROD name *Octavianina macrospora*

Family Octavianinaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS up to 2 cm in diam, white when fresh, glabrous. GLEBA loculate, presumably white when fresh. STERILE BASE present. PERIDIAL EPICUTIS consisting of a collapsed turf of clavate to cystidioid cells 18-27 x 4-8  $\mu\text{m}$  or 20-30 x 3.5  $\mu\text{m}$  if fusoid. PERIDIAL SUBCUTIS of hyaline, interwoven, subgelatinous hyphae, 3-6  $\mu\text{m}$  in diam. SPHAEROCYSTS AND OLEIFEROUS HYPHAE absent. TRAMA of thin-walled, hyaline, hyphae. SUBHYMENIUM hyphal about the diameter of the base of the basidium, 1-2 cells below the basidium the cells enlarging in age to sphaerocysts. BASIDIA 1-2 spored, 29-37 x 10-13  $\mu\text{m}$ , clavate, thin-walled, content granular and ochraceous in KOH. CYSTIDIA absent. CLAMP CONNECTIONS absent. SPORES broadly ellipsoid, 17-23 x 12-16  $\mu\text{m}$ , wall 1.5-2  $\mu\text{m}$  thick, in KOH pale tan, inamyloid, ornamentation of spines 1-1.5 (2.5) x 0.5  $\mu\text{m}$ , the spines distinct but often touching at the base.



**Distinguishing Features:** Characterized by thick-walled, inamyloid spores and a peridial turf of cystidioid elements.

**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Clackamas Co., Mount Hood National Forest, Twin Bridges campground.

**Substrate and habitat:** Found in association with the roots of *Tsuga heterophylla*.

**Season:** Fruits in August.

**References:** SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceae fungi. IX. The astrogastraceae series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**

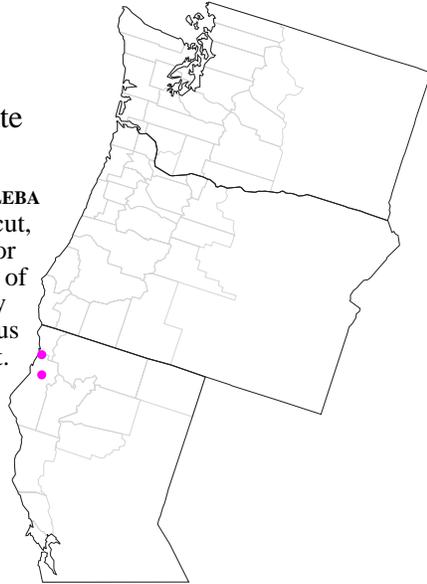
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***Octavianina papyracea* Singer & A.H. Smith**ROD name *Octavianina papyracea*

Family Octavianinaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 1 cm in diam, brown, globose, unchanging. GLEBA loculate, near pink-tan as dried, with an abundant cream colored latex when cut, COLUMELLA absent. PERIDIUM as dried almost like a thin nut shell, the exterior surface pale red-brown. ODOR not recorded. TASTE mild. PERIDIAL EPICUTIS of appressed, tan hyphae with some free hyphal ends at surface as a rudimentary turf, hyphal ends 3-4  $\mu\text{m}$  in diam. PERIDIAL SUBCUTIS of hyaline, subgelatinous hyphae with slightly thickened walls, interwoven, laticiferous hyphae present. SPHAEROCYSTIS absent. CLAMP CONNECTIONS absent. TRAMA of interwoven, hyaline, inamyloid, subgelatinous hyphae with slightly thickened walls. SUBHYMENIUM of cells 10-13  $\mu\text{m}$  in diam. BASIDIA 20-32 x 9-13  $\mu\text{m}$ , thin-walled, hyaline, 1-2 spored, sterigmata 10  $\mu\text{m}$  or more long. CYSTIDIA scattered, 46-60 x 10-13  $\mu\text{m}$ , thin-walled, hyaline, subcylindric to enlarged near apex and with an apical projection. SPORES globose to subglobose, 14-17  $\mu\text{m}$ , hyaline, inamyloid, thick-walled  $\pm 1 \mu\text{m}$ , ornamentation of dense, unfused spines 2-3  $\mu\text{m}$  long and 0.5-1  $\mu\text{m}$  at the base.



**Distinguishing Features:** Characterized by inamyloid spores and a sporocarp that exudes a latex when cut.

**Distribution:** Endemic to California. Known from two sites within the range of the northern spotted owl: CALIFORNIA, Humboldt Co., near Trinidad, Spruce Cove; Redwoods State Park, near Orick, Fern Canyon.

**Substrate and habitat:** Found in association with the roots of Pinaceae in forests dominated by *Sequoia sempervirens* below 2,000 ft. elevation.

**Season:** Fruits in November and December.

**References:** SINGER, R., AND A.H. SMITH. 1960. Studies on secotiaceous fungi. IX. The astrogastraceous series. Mem. Torr. Bot. Club 21:1-112.

**NOTES:**

No Photograph Available

***Otidea leporina* (Batsch:Fries) Fuckel**ROD name *Otidea leporina*

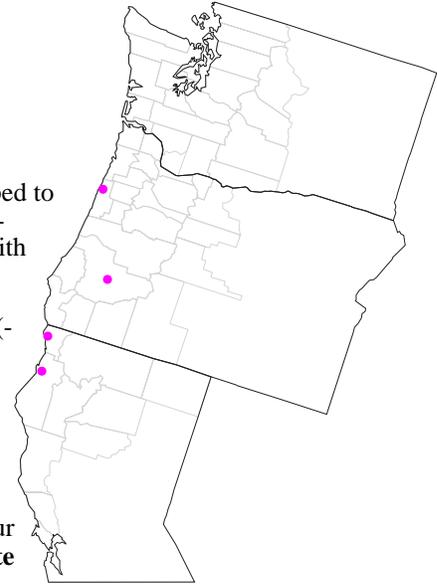
Family Otideaceae

Morphological Habit cup

**Description:** SPOROCARPS are substipitate to short stipitate, short-ear shaped to occasionally long-eared shaped, 2-6 cm tall. HYMENIAL SURFACE dull yellow-brown to brown-yellow, margin entire. ABHYMENIAL SURFACE concolorous with hymenial surface or sometimes red-brown to dingy ochre. STEM up to 6 mm long, white covered with hyphae. ASCI operculate, inamyloid, 8-spored. PARAPHYSES hyaline, curved to hooked at the apex. SPORES ellipsoid, 12-13 (-14) x (6-) 7 (-8)  $\mu\text{m}$ , smooth, biguttulate.

**Distinguishing Features:** Characterized by the short ear-shaped, yellow-colored sporocarps and long spores.

**Distribution:** Widespread in the North Temperate zone. Known from four sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Lake Earl Wildlife Refuge; **Humboldt Co.**, Big Lagoon State Park; **OREGON**, Douglas Co., Bureau of Land Management, Roseburg District, north of Cooper Creek; **Lincoln Co.**, Fogarty Creek State Park. Not known from Washington.



**Substrate and habitat:** Associated with *Picea* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits from October through December.

**References:** KANOUSE, B.B. 1949 [1950]. Studies in the genus *Otidea*. Mycologia 41:660-677.

**NOTES:**



Photo courtesy of Dr. T. O'Dell

***Otidea onotica*** (Persoon:Fries) FuckelROD name *Otidea onotica*

Family Otideaceae

Morphological Habit cup

**Description:** SPOROCARPS substipitate to short stipitate, spoon to ear-shaped, taller than broad, 60-100 mm tall, 10-40 (-60) mm broad. HYMENIAL SURFACE pale yellow with touches of pink-apricot to rose, margin even. ABHYMENIAL SURFACE pale brown-orange to dull yellow. STEM irregular, covered with white to cream hyphae. ASCI operculate, inamyloid, 8-spored. PARAPHYSES hyaline, slender, typically strongly curved at the apex. SPORES ellipsoid, (9-) 11-12 (-13) x (5.5-) 6 (-8.5)  $\mu\text{m}$ , smooth, biguttulate.

**Distinguishing Features:** Characterized by the relatively bright yellow sporocarps with pink to rose tints in the hymenium. The colors are not obvious, however, in dried specimens.

**Distribution:** Widespread in the North Temperate zone. Known from eight sites within the range of the northern spotted owl: **CALIFORNIA, Del Norte Co.**, near stateline off Hwy. 199; **OREGON, Benton Co.**, Woods Creek Rd.; **Josephine Co.**, Siskiyou National Forest, near Takilma, Oregon Caves Rd.; **Lane Co.**, Willamette National Forest, Lamb Butte Scenic Area; **WASHINGTON, Chelan Co.**, near Blewett; **King Co.**, near Redmond; **Pierce Co.**, Mount Rainier National Park, lower Tehoma Creek; **San Juan Co.**, Friday Harbor Biological Station.

**Season:** Fruits from August through December.

**Substrate and habitat:** Associated with *Pseudotsuga menziesii* dominated forests.

**References:** KANOUSE, B.B. 1949 [1950]. Studies in the genus *Otidea*. Mycologia 41:660-677.

**NOTES:**

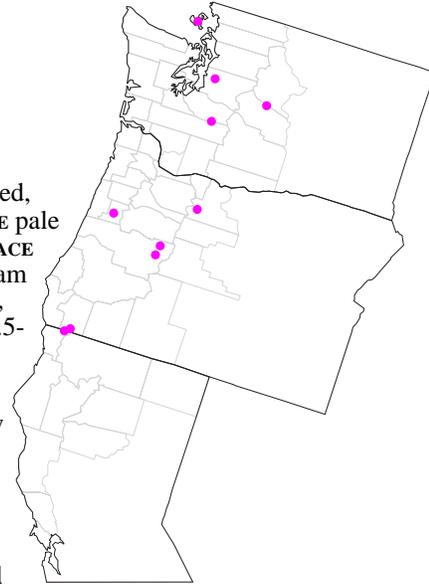
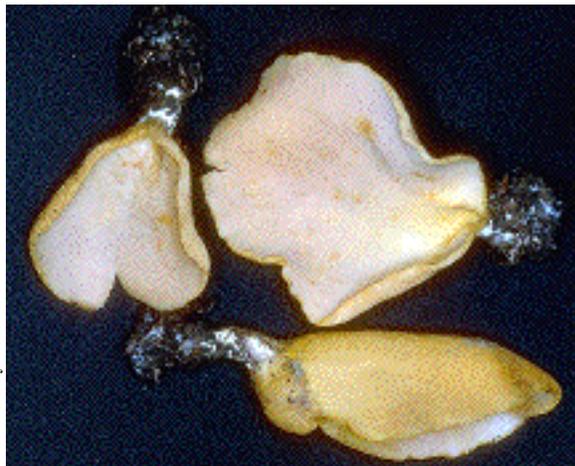


Photo available only in print version

Photo courtesy of University of Michigan  
Photo courtesy of Dr. T. O'Dell



*Otidea smithii* KanouseROD name *Otidea smithii*

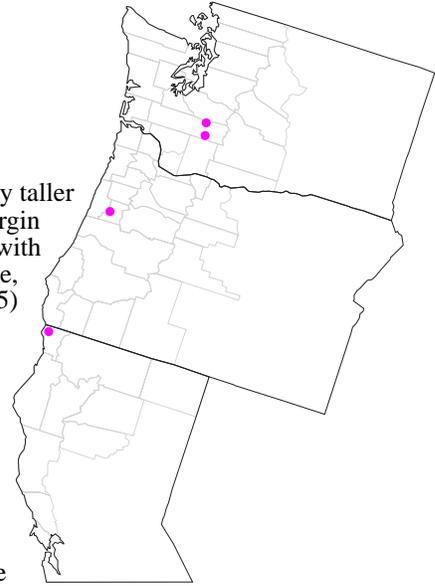
Family Otideaceae

Morphological Habit cup

**Description:** SPOROCARPS are sessile, apotheciate, 3-9 cm tall, typically taller than broad, brown to deep purple-brown when fresh. HYMENIAL SURFACE margin even. ABHYMENIAL SURFACE somewhat darker purple-brown. STEM covered with off-white hyphae. ASCI operculate, inamyloid, 8-spored. PARAPHYSES hyaline, curved to hooked at their apices. SPORES narrowly ellipsoid, (12-) 13.5 (-15.5) x (6-) 6.5 (-8)  $\mu\text{m}$ , smooth, biguttulate.

**Distinguishing Features:** Of the spoon-shaped to more or less erect ear-shaped species of *Otidea* occurring in the range of the northern spotted owl, *Otidea smithii* is the only one with a medium to deep purple-brown hymenial surface both when fresh and dry.

**Distribution:** Also known from Idaho. Known from four sites within the range of the northern spotted owl: CALIFORNIA, Del Norte Co., Earl Lake State Park; OREGON, Benton Co., Woods Creek Rd.; WASHINGTON, Pierce Co., Mount Rainier National Park, Lower Tahoma Creek; Lewis Co., Gifford-Pinchot National Forest, Camp Creek Falls trail.



**Substrate and habitat:** Solitary to gregarious on exposed soil, duff or moss under *Populus trichocarpa*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits from August through December.

**References:** KANOUSE, B.B. 1938 [1939]. Notes on new or unusual Discomycetes. Pap. Michigan Acad. Sci. 24 (pt.1):25-29.

**NOTES:**

Photo available only in print version

Photo courtesy of University of Michigan  
Photo courtesy of University of Michigan

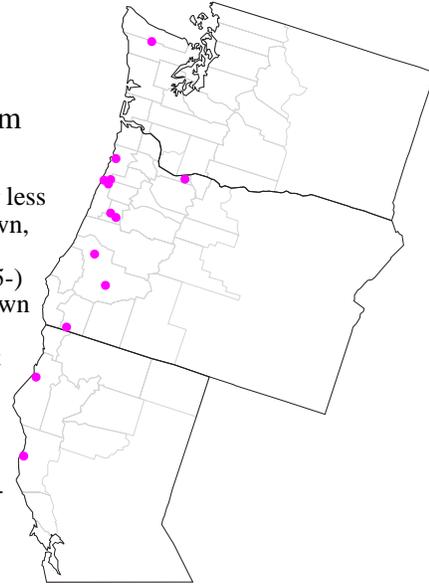
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***Phaeocollybia californica* A.H. Smith**ROD name *Phaeocollybia californica*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAPS 20-62 x 10-30 mm, convex-campanulate with more or less acute umbo, glabrous, glutinous, some shade of amber-brown to orange-brown, becoming dark brown in age. **CONTEXT** generally pale brown. **GILLS** pink-brown or yellow-brown aging to bright rusty-brown. **STEM** aerial portion (15-) 20-80 x 4-8 mm, cartilaginous, stuffed soon becoming hollow, apex pale brown at first, becoming dark orange to red-brown in age. **PSEUDORHIZA** up to 200 mm, red-brown ending in a salmon-colored thready rhizomorph. **ODOR** faint or not distinctive. **TASTE** occasionally faintly bitter. **CHEILOCYSTIDIA** a mixture of hyaline, thin-walled lageniform and thick-walled secretory tibiiform elements, the later with 2  $\mu$ m capituli, elongated 1-1.5  $\mu$ m necks and widely inflated bases. **CLAMP CONNECTIONS** absent. **SPORES** limoniform or elongated amygdaliform with pronounced straight apical beak, 8-10 x 4.8-6  $\mu$ m, heavily ornamented, in KOH dark orange-amber.



**Distinguishing Features:** Characterized by a cartilaginous stem extending well below ground level as a pseudorhiza, a pale amber-brown to dark orange brown cap with a hollow stem, a long thready pseudorhiza, and a dark cinnamon-brown spore print. *Phaeocollybia kauffmanii* is much larger, has a densely stuffed stem which does not become hollow, and it has clavate cheilocystidia. *Phaeocollybia piceae* is uniformly orange colored, has a stuffed stem, and clavate cheilocystidia. *Phaeocollybia sipei* is uniformly orange colored, has smaller, less ornamented spores, and clavate cheilocystidia. *Phaeocollybia spadicea* is larger, lacks amber or orange tones to the cap, has a densely stuffed stem covered with dense fibrillose patches, and smaller spores.

**Distribution:** Endemic to the Pacific Northwest. Known from twelve sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Murray rd. near McKinleyville; **Mendocino** Co., Van Damme State Park, Fern Canyon trail; **OREGON**, Benton Co., Dinner Creek; Bureau of Land Management (BLM), Salem District, Bellfountain Rd.; **Douglas** Co., BLM, Roseburg District, near Elk Creek; BLM, Roseburg District, Myrtle Creek; **Josephine** Co., Takilma; **Lincoln** Co., Van Duzer wayside; **Multnomah** Co., Mount Hood National Forest, Larch Mountain; **Tillamook** Co., Cape Meares State Park; Siuslaw National Forest, Cascade Head Experimental Forest; **WASHINGTON**, **Jefferson** Co., Olympic National Park, Twin Creek Research Natural Area.

**Substrate and habitat:** Associated with the roots of *Abies amabilis*, *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in March, May, October and November.

**References:** SMITH, A. H. 1957. A contribution toward a monograph of *Phaeocollybia*, Brittonia 9:195-216.

**NOTES:**

*Phaeocollybia dissiliens* A.H. Smith & TrappeROD name *Phaeocollybia dissiliens*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 30-60 mm in diam, obtusely conic with enrolled margin to expanded umbonate, glutinous, moderately orange to pale yellow-pink or pale tan, hygrophanous. FLESH watery, tan. GILLS crowded, nearly free, pale yellow, becoming cinnamon-brown from spores. STEM overall >180 mm long including pseudorhiza, aerial portion 70-120 x 8-18 mm, apex initially pale but darkening with age, hollow, readily splitting lengthwise. ODOR AND TASTE not distinctive. CHEILOCYSTIDIA 28-37 x 3.5-6 µm, filamentous. CLAMP CONNECTIONS often present on terminal elements, cheilocystidia, and in pileipellis. SPORES ovate, 6-7.5 x 3.7-4.5 µm, apex blunted and not beaked, minutely punctate roughened, asymmetrical, in KOH red-brown.

**Distinguishing Features:** Characterized by a cartilaginous stem extending well-below ground level as a pseudorhiza, an orange-brown cap with pale orange-white gills, a very pale orange-white hollow stem, and a dark cinnamon-brown spore print. *Phaeocollybia radicata*, another small-spored species with clamp connections, has a smaller cap (only to 30 mm broad), narrower stem (2-3 mm broad), and tibiiform cheilocystidia with refractive necks. *Phaeocollybia sipei* has slightly smaller spores and lacks clamp connections.

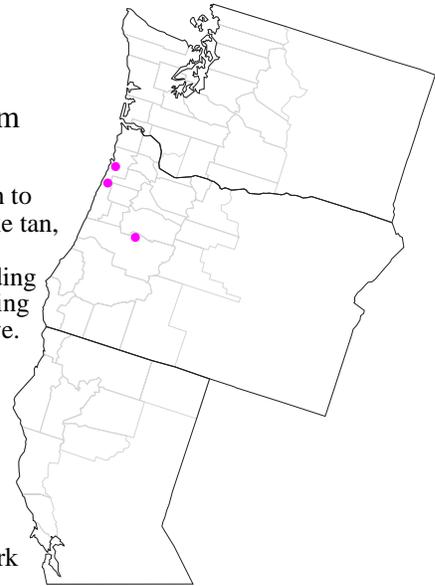
**Distribution:** Endemic to Oregon. Known from three sites within the range of the northern spotted owl: **OREGON, Lane Co.**, Bureau of Land Management, Eugene District, Bunker Hill; **Lincoln Co.**, Siuslaw National Forest, Cascade Head Experimental Forest; **Tillamook Co.**, Cape Lookout State Park.

**Substrate and habitat:** Associated with the roots of *Abies amabilis*, *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** SMITH, A. H. AND J. M. TRAPPE. 1972. The higher fungi of Oregon's Cascade Head Experimental Forest and vicinity I. The genus *Phaeocollybia* (Agaricales) and notes and descriptions of other species in the Agaricales. *Mycologia* 64:1138-1153.

**NOTES:**



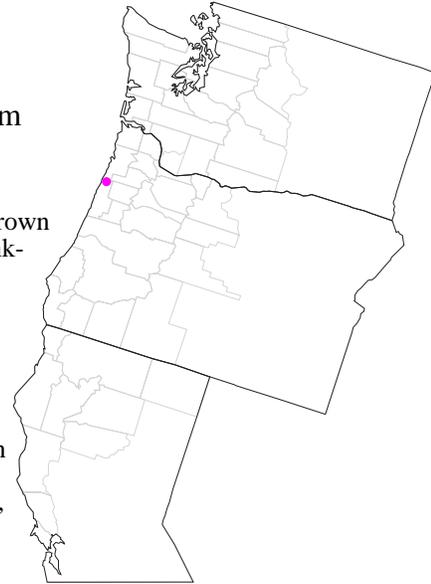
***Phaeocollybia gregaria*** A.H. Smith & TrappeROD name *Phaeocollybia gregaria*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 30-60 mm in diam, conic to broadly conic, glabrous, glutinous, gray-brown. FLESH thin, pliant. GILLS pale gray, becoming red-brown from spores. STEM aerial portion 80-180 x 8-15 mm, apex glabrous, pale pink-gray. ODOR AND TASTE not distinctive. CHEILOCYSTIDIA 20-35 x 2-5  $\mu\text{m}$ , filamentous to narrowly clavate, somewhat irregular in outline. CLAMP CONNECTIONS absent. SPORES limoniform with prominent apical beak, 9-11 x 5.5-6  $\mu\text{m}$ , obscurely punctate-roughened, in KOH pale red-brown.

**Distinguishing Features:** Characterized by a cartilaginous stem extending well-below ground level as a pseudorhiza, a glutinous, gray-brown cap, a pink-gray stem, and a dark red-brown spore print. *Phaeocollybia spadicea* has a dark brown to black cap, fibrillose patches on the apical stem, smaller more coarsely ornamented spores, and tibiiform cheilocystidia. *Phaeocollybia piceae* has an orange-red cap, bitter taste, spores lacking an apical beak, and wider clavate cheilocystidia.



**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Tillamook Co., Siuslaw National Forest, Cascade Head Experimental Forest.

**Substrate and habitat:** Associated with the roots of *Picea sitchensis* and *Pseudotsuga menziesii*.

**Season:** Fruits in October and November.

**References:** Smith, A. H. and J. M. Trappe. 1972. The higher fungi of Oregon's Cascade Head Experimental Forest and vicinity I. The genus *Phaeocollybia* (Agaricales) and notes and descriptions of other species in the Agaricales. Mycologia 64:1138-1153.

**NOTES:**



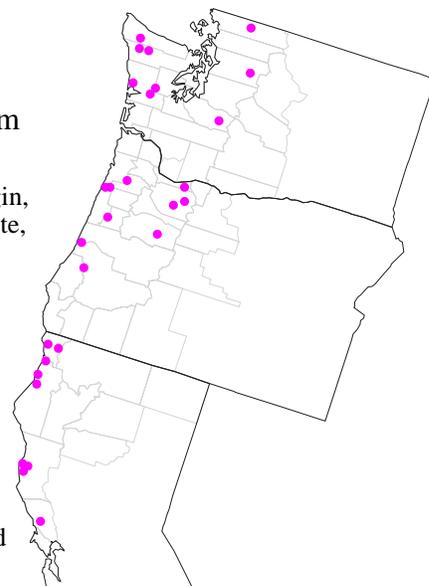
Photo courtesy of E. Butler

*Phaeocollybia kauffmanii* A.H. SmithROD name *Phaeocollybia kauffmanii*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 8-15 (-25) cm in diam, campanulate with enrolled margin, glabrous, viscid to glutinous, some shade of brown. FLESH firm, creamy white, frequently staining orange. GILLS more or less free, crowded, pale pink-tan becoming red-brown from spores. STEM aerial portion 200-400 x 15-35 (40) mm, gradually tapered to a long pseudorhiza, dry, longitudinally striate, pale pink-tan, becoming darker to nearly black in age, thick cartilaginous rind densely packed with a pallid pith. ODOR faintly farinaceous. TASTE farinaceous. CHEILOCYSTIDIA 30-40 x 5-9  $\mu$ m, narrowly clavate; clamp connections absent. SPORES limoniform to amygdaliform with a small apical beak, 8-10 (-11) x 4.5-6 (-7)  $\mu$ m, rugulose-roughened, amber in KOH.



**Distinguishing Features:** Characterized by a viscid, orange- to chestnut-brown, involute campanulate cap, a cucumber-farinaceous odor, and a massive cartilaginous pink stem filled with dense, firm, white pith. *Phaeocollybia californica* is much smaller and more fragile, has longer, darker spores, and tibiiform cheilocystidia. *Phaeocollybia oregonensis* has a drab colored cap, small bullet-shaped, pale, punctate-roughened spores, and occasional clamp connections. *Phaeocollybia piceae* is smaller and more fragile and lacks the dense, firm stiptipith.

**Distribution:** Endemic to the Pacific Northwest. Known from thirty sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Jedediah Smith State Park, Stout Grove; Six Rivers National Forest, Smith River National Recreation Area, Dry Lake; **Humboldt Co.**, Prairie Creek State Park; Patrick's Point State Park; McKinleyville; **Mendocino Co.**, Russian Gulch State Park; Jackson State Forest; Van Damme State Park; **Sonoma Co.**, Camp Meeker; **OREGON**, **Benton Co.**, Siuslaw National Forest, Mary's Peak, Chintimini Creek; Siuslaw National Forest, Mary's Peak campground loop trail; **Clackamas Co.**, Mount Hood National Forest, Wildcat Mountain; Estacada; **Coos Co.**, Winchester Forest; **Douglas Co.**, Lake Tahkenitch; **Linn Co.**, Bureau of Land Management (BLM), Salem District, Quartzville Rd., near Dogwood picnic area; **Multnomah Co.**, Mount Hood National Forest, Larch Mountain; **Tillamook Co.**, BLM, Salem District, Bald Mountain, Camp Cooper; Siuslaw National Forest, lower Cascade Head rd.; Siuslaw National Forest, Cascade Head Experimental Forest; **WASHINGTON**, **Clallam Co.**, Olympic National Park, Rugged Ridge trail; **Grays Harbor Co.**, near Copalis; Sylvia Lake State Park; **Jefferson Co.**, Olympic National Park, between Twin Creeks; Spruce Creek; **Mason Co.**, Schafer State Park; **Pierce Co.**, Mount Rainier National Park, upper Tahoma campground; Mount Rainier National Park, Ipsut Creek; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Barlow Pass; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, Silver Fir campground.

**Substrate and habitat:** Associated with the roots of *Abies amabilis*, *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits from late September through early January.

**References:** SMITH, A.H. 1957. A contribution toward a monograph of *Phaeocollybia*. Brittonia 9:195-217.

**NOTES:**

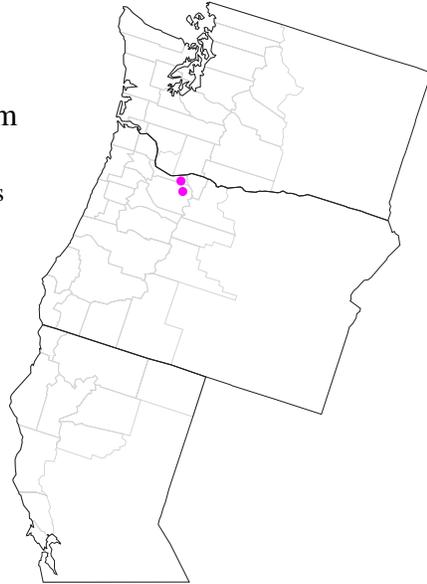
Photo courtesy of C. Ardrey

***Phaeocollybia oregonensis*** A.H. Smith & TrappeROD name *Phaeocollybia oregonensis*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 20-70 (110) mm in diam, convex with incurved margins becoming plane with acute umbo and straight margin, glabrous, viscid to glutinous, some shade of drab-brown or gray-brown. **FLESH** creamy to pink-white, stipitipith generally firm and dense, unchanging or staining slightly brown. **GILLS** free, gray-white, becoming more drab in age and darker when covered with spores. **STEM** including pseudorhiza to 304 mm, aerial portion 20-60 (-75) x 7-12 (-16) mm, more or less equal, dry to slightly moist, apex gray-tan grading into brown and orange-brown or purple-brown below. **ODOR** mild, of cucumbers, or raw potatoes. **TASTE** mild, sometimes quite bitter. **CHEILOCYSTIDIA** 24-34 x (2-) 3-6  $\mu$ m, cylindrical to narrowly clavate, gelatinized. **CLAMP CONNECTIONS** sporadic to frequent. **PILEIPELLIS** suprapellis up to 300  $\mu$ m thick, composed of gelatinized hyphae 2-4  $\mu$ m in diameter, overlying a pellis of slightly inflated 5-10  $\mu$ m in diam, amber hyphae. **SPORES** ellipsoid, 5.2-7.5 (-8) x (3-) 3.5-4.5  $\mu$ m, asymmetrical, virtually smooth to sparsely punctate roughened, in KOH pale red-brown.



**Distinguishing Features:** Characterized by a cartilaginous stem extending well-below ground level as a pseudorhiza, a gray to gray-brown cap, a convex-campanulate pileus with gray-white lamellae, a slender smoky-tan stem, and a dark red-brown spore print. *Phaeocollybia carmanahensis* is smaller, has a thinner, glassy suprapellis (less than 50  $\mu$ m thick) and lacks clamp connections.

**Distribution:** Endemic to Oregon. Known from two sites within the range of the northern spotted owl: **OREGON**, **Clackamas Co.**, Mount Hood National Forest, Wildcat Mountain; **Multnomah Co.**, Mount Hood National Forest, Larch Mountain.

**Substrate and habitat:** Associated with the roots of *Abies amabilis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** SMITH, A. H. AND J. M. TRAPPE. 1972. The higher fungi of Oregon's Cascade Head Experimental Forest and vicinity I. The genus *Phaeocollybia* (Agaricales) and notes and descriptions of other species in the Agaricales. *Mycologia* 64:1138-1153.

**NOTES:**

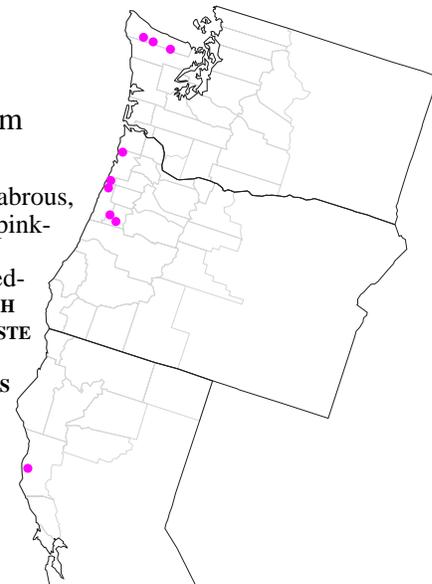
*Phaeocollybia piceae* A.H. Smith & TrappeROD name *Phaeocollybia piceae*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP (11-) 15-40 (-55) mm in diam, convex-campanulate, glabrous, moist to subviscid, apricot-colored to red-orange. **FLESH** pale orange-tan to pink-tan, thin. **GILLS** pale orange-tan, becoming clay-colored from spores. **STEM** aerial portion 20-98 x 3-10 mm, apex glabrous or covered with short, dark red-brown fibrils, apex orange intensifying to deep orange-red in age. **STIPITIPITH** usually insect-eaten in mature sporocarps. **ODOR** variable, usually faint. **TASTE** usually slightly to intensely bitter. **CHEILOCYSTIDIA** 16-38 x 4-5 (-6)  $\mu\text{m}$ , narrowly clavate, regular to slightly irregular in outline. **CLAMP CONNECTIONS** absent. **SPORES** limoniform with a slightly blunted apical beak, 8.7-10.2 (-11)  $\mu\text{m}$ , slightly to moderately ornamented, in KOH red-brown.

**Distinguishing Features:** Characterized by a cartilaginous stem extending well-below ground level as a pseudorhiza, a orange, subviscid, broadly to acutely convex-campanulate cap, free gills, and orange slender stem, and a dark red-brown spore print. *Phaeocollybia californica* lacks the bright orange coloration on the cap and has tibiiform cheilocystidia. *Phaeocollybia gregaria* has a gray-brown, glutinous cap, mild taste, more prominently beaked spores, and cylindrical to more narrowly clavate cheilocystidia. *Phaeocollybia kauffmanii* is a much more robust mushroom with a browner cap and dense firm stipitipith rarely consumed by insects.



**Distribution:** Endemic to the Pacific Northwest. Known from nine sites within the range of the northern spotted owl: **CALIFORNIA**, Mendocino Co., Jackson State Forest; **OREGON**, Benton Co., Siuslaw National Forest, Marys Peak Scenic Botanical Area; Bureau of Land Management, Salem District, Reese Creek; **Tillamook Co.**, Oswald West State Park; Siuslaw National Forest, Cascade Head Experimental Forest; **WASHINGTON**, Clallam Co., La Push, Third Beach parking lot; La Push; Olympic National Park, Rugged Ridge trail; **Jefferson Co.**, Olympic National Park, Twin Creek Research Natural Area.

**Substrate and habitat:** Associated with the roots of *Abies amabilis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** SMITH, A. H. AND J. M. TRAPPE. 1972. The higher fungi of Oregon's Cascade Head Experimental Forest and vicinity I. The genus *Phaeocollybia* (Agaricales) and notes and descriptions of other species in the Agaricales. Mycologia 64:1138-1153.

**NOTES:**

***Phaeocollybia sipei*** A.H. SmithROD name *Phaeocollybia sipei*

Family Cortinariaceae

Morphological Habit mushroom

**Description:** CAP 30-50 mm in diam, obtusely umbonate with enrolled margin expanding to broadly umbonate, glutinous to viscid, bright orange to red or apricot-orange. FLESH, ODOR AND TASTE not recorded. GILLS apricot orange to rusty brown. STEM aerial portion 60-120 x 3-6 mm, soon hollow, apex yellow, darkening to ferruginous or purple-red from the base up. CHEILOCYSTIDIA 30-40 x 7-9  $\mu$ m, cylindrical to broadly clavate. CLAMP CONNECTIONS absent. SPORES subelliptic with rounded apex, lacking an apical beak, 5.5-6.5 x 3.5-5  $\mu$ m, faintly ornamented, in KOH ochraceous tawny.

**Distinguishing Features:** Characterized by a cartilaginous stem extending well-below ground level as a pseudorhiza, an orange cap with orange gills, a yellow stem, and a dark red-brown spore print. *Phaeocollybia californica* lacks the intense orange coloration on the cap, has larger, heavily ornamented spores, and tibiiform cheilocystidia. *Phaeocollybia dissiliens* has slightly larger spores and definite clamp connections. *Phaeocollybia piceae* has much larger, more heavily ornamented spores.

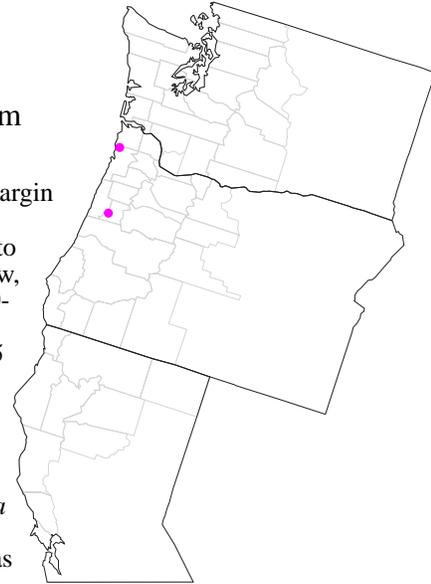
**Distribution:** Endemic to Oregon. Known from three sites within the range of the northern spotted owl: OREGON, Benton Co., Dinner Creek; Benton Co., Siuslaw National Forest, Mary's Peak campground; Tillamook Co., 1.5 miles north of Oswald West State Park.

**Substrate and habitat:** Associated with the roots of *Abies amabilis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** SMITH, A. H. 1957. A contribution toward a monograph of *Phaeocollybia*, Brittonia 9:195-216.

**NOTES:**

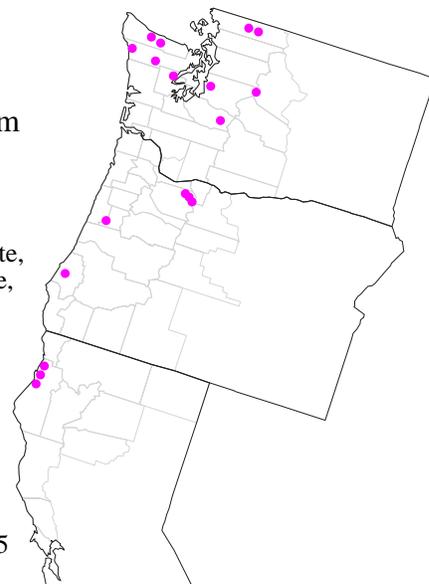


*Pholiota albivelata* MurrillROD name *Pholiota albivelata*

Family Strophariaceae

Morphological Habit mushroom

**Description:** CAP 40-80 mm in diam, broadly convex to plano-convex, glabrous, smooth to rugulose overall, viscid, pale vinaceous brown to dark vinaceous brown, margin slightly paler. **FLESH** white. **GILLS** adnate to arcuate, close, dark brown. **STEM** 50-100 x 4-10 mm, cylindrical, slightly enlarged base, dry, appressed-fibrillose or floccose above annulus, scurfy to nearly glabrous below annulus, white overall or yellow at the base. **PARTIAL VEIL** persistent, membranous, white, striate on upper surface, floccose on lower surface. **ODOR AND TASTE** not distinctive. **PILEIPELLIS** 100  $\mu\text{m}$  thick, an ixocutis of repent hyphae 1.5-3  $\mu\text{m}$  in diam embedded in a gelatinous matrix. **GILL TRAMA** inamyloid. **BASIDIA** 4-spored. **CHELOCYSTIDIA** 20-56 x 3-7  $\mu\text{m}$ , filamentous-capitate. **PLEUROCYSTIDIA** (chrysocystidia) abundant, 30-50 x 5-12  $\mu\text{m}$ , clavate to mucronate, hyaline but with coagulated, amorphous, refractive, yellow to golden contents in KOH, or ochraceous to red in Melzer's reagent. **CLAMP CONNECTIONS** present. **SPORES** ellipsoid, 7-9 x 4-5.5  $\mu\text{m}$ , smooth, germ pore minute, dark yellow-brown spore print.



**Distinguishing Features:** Characterized by a conspicuous, persistent, white, membranous annulus, smooth, ellipsoid spores 7-9 x 4-5.5  $\mu\text{m}$ , abundant, clavate to mucronate pleurocystidia with yellow, globular to amorphous refractive contents (i.e., chrysocystidia), filamentous, subcapitate cheilocystidia, and a distinctly gelatinous pileipellis. *Pholiota albivelata* is most closely related to *P. sipei* A. H. Smith & Hesler, described from the Willamette Valley in Oregon. *Pholiota sipei* has a slightly more yellow annulus, and differs considerably in micromorphology. *Pholiota sipei* has larger spores (9-12 x 4.5-6  $\mu\text{m}$ ) and has two types of pleurocystidia, i.e., chrysocystidia like those of *P. albivelata* but smaller, plus large leptocystidia that are fusoid ventricose and measure 50-75 x 10-20  $\mu\text{m}$ . Distinguished from *Stropharia hormanii* by spore color.

**Distribution:** Endemic to the Pacific Northwest. Known from thirty-seven sites, all within the range of the northern spotted owl. Of the total of fifty-two collections, twenty-two collections are from eighteen sites in Washington, eighteen collections are from thirteen sites in Oregon, and twelve collections are from six sites in California. Most sites have scant information that does not allow specific land allocation to be determined. Of those sites that have sufficient information a number are known from Federal land: **OREGON, Benton Co.**, Siuslaw National Forest, Mary's Peak; **Coos Co.**, Coos County Forest, Beaver Hill area; **Clackamas Co.**, Mount Hood National Forest, near Mile Bridge; Mount Hood National Forest, Still Creek; Mount Hood National Forest, Camp Creek campground; Mount Hood National Forest, near Welches; **WASHINGTON, Clallam Co.**, Olympic National Park, Lake Crescent; **Jefferson Co.**, Olympic National Park, Graves Creek; Olympic National Park, Hoh River; Olympic National Park, Mount Angeles; **King Co.**, Mount Baker-Snoqualmie National Forest, Tunnel Creek; Seattle, Schmitz Park; **Mason Co.**, Olympic National Forest, headwaters of Lilliwayup Creek; **Pierce Co.**, Mount Rainier National Park, Tahoma Creek; Mount Rainier National Park, Ipsut Creek; **Whatcom Co.**, Mount Baker-Snoqualmie National Forest, Hannegan Pass, Mount Baker-Snoqualmie National Forest, Tunnel Creek; Mount Baker-Snoqualmie National Forest, Silver Fir campground. It is not known from any Federal land in California.

**Substrate and habitat:** Apparently restricted to conifer forests and usually found as scattered, single sporocarps on fallen branches or other conifer debris.

**Season:** Fruits from late April through early January.

**References:** SMITH, A. H., AND HESLER, L. R. 1968. The North American species of *Pholiota*. Lubrecht & Cramer, Monticello, New York. 402 pp.

**NOTES:**

Photo available only in print version

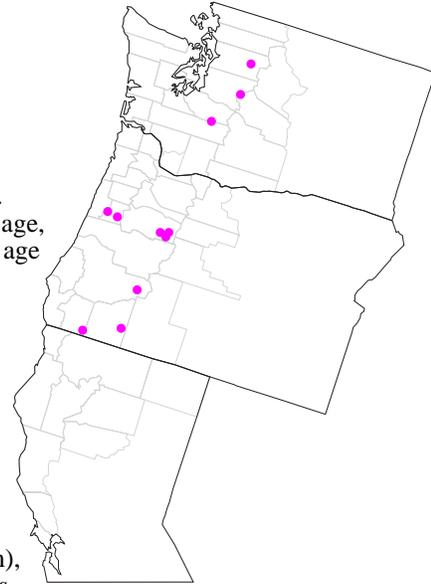
*Pithya vulgaris* FuckelROD name *Pithya vulgaris*

Family Sarcoscyphaceae

Morphological Habit cup

**Description:** **SPOROCARPS** sessile to short-stipitate, pulvinate, apotheciate. **HYMENIAL SURFACE** regular at first, sometimes becoming slightly irregular in age, 1-6 (-15) mm in diam, 1-2 mm in profile, at first subcylindric, broadening in age to discoid, even, flat to slightly convex, bright orange. **ABHYMENIAL SURFACE** glabrous near margin with white, anchoring hyphae toward the base, tinged with color of hymenium at margin and paler and whiter toward base. **ASCI** operculate, inamyloid, to 300-325  $\mu\text{m}$  long. **SPORES** globose, 12-14  $\mu\text{m}$  in diam, hyaline, eguttulate.

**Distinguishing Features:** Characterized by pulvinate, sessile to short-stipitate sporocarps, 1-15 mm in diam, with a bright orange hymenium, occurring on leaves and twigs of conifers (particularly *Abies* sp. and *Sequoia* sp.) near melting snow. *Pithya cupressina* (Batsch : Fr.) Fr. differs in having smaller sporocarps, typically less than 4 mm in diam, shorter asci (to 250  $\mu\text{m}$ ), and slightly smaller ascospores (10-12  $\mu\text{m}$ ). It fruits on species of *Juniperus*, *Thuja*, and *Sequoiadendron*. *Pithya lacunosa* (Ellis & Ev.) Seaver has similar morphology as *P. vulgaris*, it fruits on *Abies* species and is separated from *P. vulgaris* on the basis of asci that are 200-225  $\mu\text{m}$  long. *Pithya lacunosa* was described from Maine. Based on Seaver's (1928) descriptions, a key difference between *P. vulgaris* and *P. lacunosa* is the smooth vs. lacunose hymenium, potentially a developmental character.



**Distribution:** Widespread in boreal forests of the North Temperate zone. Known from twelve sites within the range of the northern spotted owl: **OREGON**, **Benton Co.**, Siuslaw National Forest, Mary's Peak, Meadow Edge trail; Bureau of Land Management, Salem District, Bellfountain Rd.; **Jackson Co.**, Rogue River National Forest, near Camp Latgawa; **Josephine Co.**, Rogue River National Forest, 1.1 miles west of Steve Peak; Rogue River National Forest, Miller Lake; **Linn Co.**, Willamette National Forest, Lost Prairie; Willamette National Forest, Tombstone Pass; Willamette National Forest, H.J. Andrews Experimental Forest, Carpenter Mountain; **Douglas Co.**, Umpqua National Forest, DEMO study, Dog Prairie block; **WASHINGTON**, **Kittias Co.**, Snoqualmie Pass; **Lewis Co.**, Mount Rainier National Park, Eagle Peak; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Barlow Pass. Several vague localities occur in California.

**Substrate and habitat:** Saprophyte or a needle endophyte. It fruits on wet, dead, usually detached branch tips (with needles) and twigs of *Abies* and *Sequoia*, in montane areas often within several yards of snowbanks or within a few weeks of snow melt.

**Season:** Fruits from March through May, also in November.

**References:** SEAVER, F.J. 1928. The North American Cup-Fungi (Operculates). New York: Seaver. 284 pp.

**NOTES:**

Photo courtesy of Dr. M.A. Castellano  
Photo courtesy of Dr. M.A. Castellano

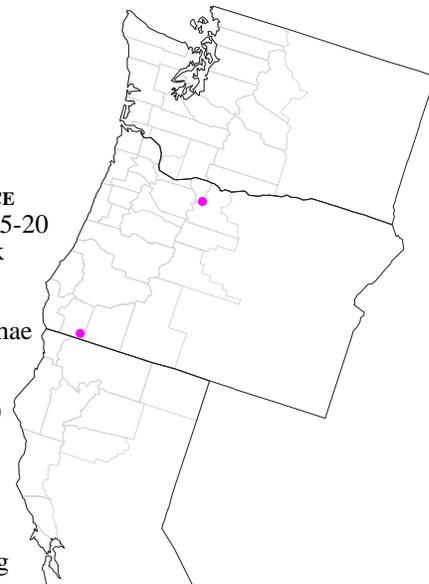


*Plectania milleri* Paden & TylutkiROD name *Plectania milleri*

Family Sarcosomataceae

Morphological Habit cup

**Description:** **SPOROCARPS** sessile, discoid, apotheciate. **HYMENIAL SURFACE** more or less regular, varying to compressed from above, 10-40 mm in diam, 5-20 mm in profile, cupulate to broadly bowl shaped or in age nearly discoid, dark brown to purple-brown or nearly black, drying black, even. **ABHYMENIAL SURFACE** black, covered with appressed dark brown to black hyphae, lacking orange granules near the margin. **MEDULLARY EXCIPULUM** of interwoven hyphae with ramifying, dark brown hyphae extending from the ectal excipulum toward the hymenium. **ASCI** operculate, inamyloid, 8-spored, walls slightly thickened. **SPORES** ellipsoid, 21-25.5 x 9-10.5  $\mu\text{m}$  (Paden & Tylutki) [(24.4-) 26.3-27.6 (-28.9) x 10.5-12.5  $\mu\text{m}$  in fresh material from Oregon], with homogeneous contents, smooth.



**Distinguishing Features:** Characterized as a sessile, black cup with a black, stellate margin and hirsute abhymenial surface and occurs in the spring and summer. *Pseudoplectania melaena* (Pers.:Fr.) Sacc. differs in having globose spores, and fruiting on dead twigs and branches of conifers in early spring. *Sarcosoma mexicana* is much more highly gelatinized.

**Distribution:** Also known from Idaho. Known from two sites within the range of the northern spotted owl: **OREGON**, Josephine Co., Rogue River National Forest, Miller Lake; Wasco Co., Mount Hood National Forest, trail to Little Boulder Lake.

**Substrate and habitat:** Associated with mixed conifers.

**Season:** Fruits in May.

**References:** PADEN, J.W., AND E.E. TYLUTKI. 1969. Idaho Discomycetes. II. Mycologia 61:683-693.

**NOTES:**

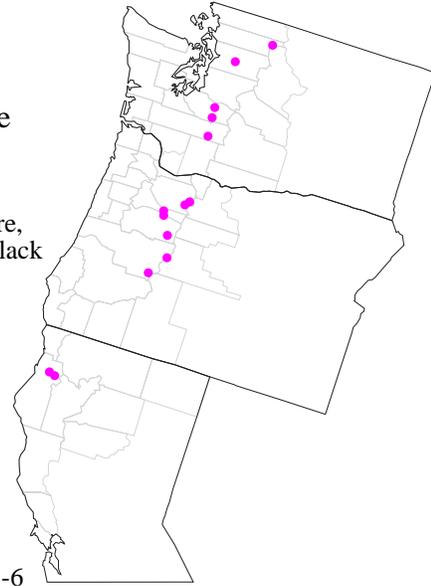
***Polyzellus multiplex*** (Underwood) MurrillROD name *Polyzellus multiplex*

Family Thelephoraceae

Morphological Habit chanelle

**Description:** CAPS 5-15 cm in diam, often in multiples, plano-convex to flabelliform, occasionally becoming slightly to deeply depressed when mature, slightly fibrillose to rough-glabrous, dry, dark purple-violaceous to purple-black or paler with violet tones predominating. FLESH somewhat brittle, violet to black, becoming dark black-green in KOH. ODOR mild to faintly pungent. TASTE not distinctive. HYMENIAL ridges strongly decurrent, forked, often anastomosing, more or less blunt, concolorous with cap but frequently becoming gray-violet when dried. STEM 30-50 (-70) x 8-25 mm, compound, more or less eccentric to lateral, upper portion covered by decurrent ridges, dark violaceous-black. TRAMA green-black in KOH. SPORES tuberculate to angular tuberculate, 4.5-9 x 4.5-8 µm, inamyloid, spore print white.

**Distinguishing Features:** Characterized by the dark purple sporocarps with blunt gray-violet hymenial ridges and a white spore print. *Craterellus cinereus* var. *multiplex* is more brown, has ellipsoid, smooth spores (8-11 x 5-6 µm) and tissues which do not stain green in KOH. *Gomphus clavatus* is paler, has ellipsoid, smooth spores (9-12 x 5-6 µm) and tissues which also do not stain green in KOH.



**Distribution:** Also occurs elsewhere in the United States (south to New Mexico and east to Maine). Known from fourteen sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Hoopa Indian Reservation, South Mill Creek Rd.; Hoopa Indian Reservation, Big Hill Rd., behind summer cabins; **OREGON**, Clackamas Co., Mount Hood National Forest, Little Crater Lake; Mount Hood National Forest, intersection of Rds. 5810 and 5820; Deschutes Co., Deschutes National Forest, Elk Lake, south of campground; Lane Co., near Mule Prairie; Linn Co., Willamette National Forest, Lost Prairie campground; Marion Co., Willamette National Forest, Battle Axe Creek drainage, 1 mile east of Jawbone Flat; Willamette National Forest, Opal Creek; **WASHINGTON**, Pierce Co., Mount Rainier National Park, St. Andrews Creek; Mount Rainier National Park, near Carbon River Ranger Station; Skagit Co., Okanogan National Forest, Easy Pass trailhead; Lewis Co., Gifford Pinchot National Forest, Cispus Environmental Center; Snohomish Co., Mount Pilchuck State Park.

**Substrate and habitat:** Occurs in association with roots of *Abies* spp. in late-successional, mid-elevation, montane, conifer forests.

**Season:** Fruits in June through November.

**References:** CORNER, E.J.H. 1966. A Monograph of Cantharellloid Fungi. Oxford University Press, Cambridge.

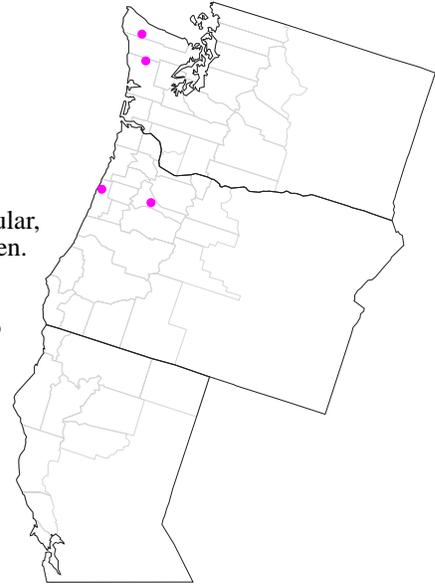
**NOTES:**

*Pseudaleuria quinaultiana* LuskROD name *Pseudaleuria quinaultiana*

Family Otidaceae

Morphological Habit cup

**Description:** **SPOROCARPS** sessile to substipitate, apotheciate. **HYMENIAL SURFACE** broadly bowl-shaped to repand, from above regular to slightly irregular, 7-35 mm in diam, in profile 5-15 mm tall, bright red-orange, more or less even. **ABHYMENIAL SURFACE** concolorous to somewhat paler, invested with long somewhat matted hairs less dense toward point of attachment. **MARGIN** somewhat enrolled at first, straight to flaring in age, invested with pale tan to very pale brown hairs. **ASCI** operculate, inamyloid, thin-walled, 8-spored, with paired basal scars and apparently arising from croziers. **PARAPHYSES** straight. **SPORES** ellipsoid, 15.5-19.5 x 7.5-10.5  $\mu\text{m}$  (Lusk, 1987) or fresh spores in water 18.2-21.5 x (8.5-) 9.1-10.4  $\mu\text{m}$ , smooth.



**Distinguishing Features:** Characterized by a vernal fruiting bright red-orange, sessile to substipitate cup fungus with a hairy, red-orange, abhymenial surface. *Pseudoplectania nigrella* (Pers. : Fr.) Fuckel differs in having globose spores and in fruiting on the ground in late spring to early summer. *Plectania melastoma* (Sowerby : Fr.) Fuckel differs in having orange granules on the abhymenial surface near the margin and in releasing pink to rose pigments when sections of that region are mounted in KOH. *Sarcoscypha coccinea* (Fr.) Lambotte differs in typically having a rosy red (rarely nearly white) hymenium, fruiting on or adjacent to hardwood twigs and branches especially *Acer macrophyllum* Pursch, multiguttulate spores 25-35 x 11-14  $\mu\text{m}$ , asci with thickened walls and long, narrow bases. *Aleuria aurantia* has an orange hymenium, reticulate, ornamented spores, and fruits in heavily disturbed areas from fall into early spring.

**Distribution:** Endemic to Oregon and Washington. Known from five sites within the range of the northern spotted owl: **OREGON**, **Lincoln Co.**, Siuslaw National Forest, Drift Creek Wilderness; **Marion Co.**, Silver Falls State Park; **WASHINGTON**, **Clallam Co.**, Olympic National Park, east of Forks; Olympic National Park, Rugged Ridge trail; **Gray's Harbor Co.**, Olympic National Forest, Quinault rainforest trail.

**Substrate and habitat:** Occurs on disturbed microsites (trail sides, recent windthrow mounds) in low elevation old-growth forest that includes *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits from March through May.

**References:** LUSK, D.E. 1987. *Pseudaleuria quinaultiana*, a new genus and species of operculate Ascomycete from the Olympic Peninsula. Mycotaxon 30:417-431.

**NOTES:**

No Photograph Available

**Ramaria amyloidea** Marr & StuntzROD name *Ramaria amyloidea*

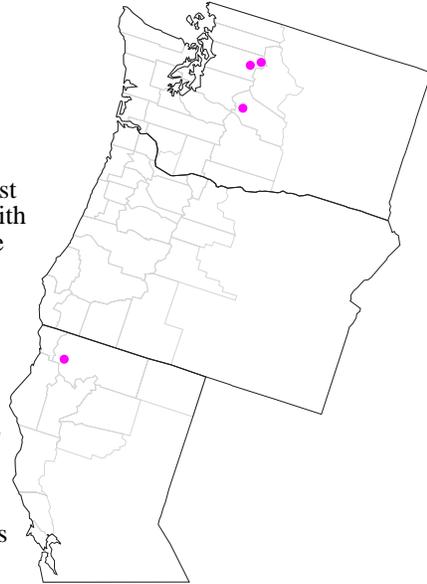
Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 7-13 x 7-15 cm, white to orange-white with subareolate regions of brown superficial hyphae, when mature the stem almost entirely brown, branches pale orange with a tinge of pale red, occasionally with small violet-gray bruised spots, apices concolorous, a distinctive band of pale camel brown hyphae visible in the basal region of a radially sectioned stem.

**FLESH** of stem similar to that of fresh material, flesh of the branches yellow-white. **STEM** single, conical to cylindrical, stout, 2-6.5 x 2-4.5 cm, branching from the base up to 8 times, lower nodes commonly polychotomous, axils frequently acute or turbinate, branches slight to moderately divergent, lower branches sometimes connate, up to 4 cm diam, primary and secondary internodes lengthening up to 3 cm, upper branches generally short, numerous and compacted on the primary branches, the more congested sporocarps cauliflower-like in form, pluridigitate or plurinodulose near the apices; apices rounded. Consistency fleshy fibrous when fresh, drying hard, brittle, and slightly chalky-friable. **FLESH OF STEM** amyloid; flesh of fresh sporocarps instantly turquoise green with FSW; the brown band in the stem darkening with KOH; PYR, ANW, GUA, PHN or ANO negative. **ODOR** slightly sweet.

**TASTE** not distinctive. **CONTEXT HYPHAE** forming a densely stratified subparallel layer about 60 µm thick, the underlying context compactly interwoven, context of the branches of parallel hyphae, 4-19 µm in diam, moderately cyanophilic, thick-walled, ampulliform swellings near septa rare in the branches, sparse in the stem, 8-22 µm in diam, walls of the swellings moderately ornamented in the stem, nearly smooth in the branches. **GLEOPLEUROUS HYPHAE** sparse, 3.5-4 µm in diam or up to 9 µm in localized bulbous regions. **SUBHYMENIA** of thin-walled, loosely interwoven hyphae, 2-4 µm in diam, cyanophilic globular inclusions common. **BASIDIA** clavate, 47-82 x 7-10 µm, cyanophilic, 2-4 spored. **STERIGMATA** 4-6 µm long, slightly incurved or straight, not divergent. **CLAMP CONNECTIONS** common. **SPORES** narrowly cylindrical, 7-10 x 3-4 µm, (mean = 8.9 x 3.6), finely ornamented, warts cyanophilic, apricot yellow spore print.



**Distinguishing Features:** Characterized by a flesh which instantly turns blue-green with FSW, a band of pale brown hyphae visible in the basal region of a radially sectioned stem, amyloid flesh, and short, narrowly cylindrical, nearly smooth spores. *Ramaria velocimutans*, *R. celerivirescens*, *R. claviramulata*, and *R. rubiginosa* are other species which have one or more of the first three features. None of these species, however, resembles *R. amyloidea* with respect to the short, narrowly cylindrical, nearly smooth spores, and they differ further either in sporocarp color or in lacking clamp connections.

**Distribution:** Endemic to California and Washington. Known from four sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Marble Mountain Wilderness Area, Haypress Meadows; **WASHINGTON**, Kittitas Co., Lake Kachess; **Snohomish** Co., Mount Baker-Snoqualmie National Forest, Glacier Peak Wilderness, Sulphur Creek; Mount Baker-Snoqualmie National Forest, Sloan Creek trail. Not known from Oregon.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla*.

**Season:** Fruits in September and October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**

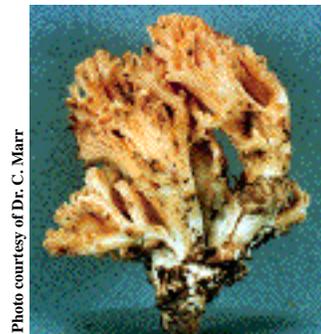


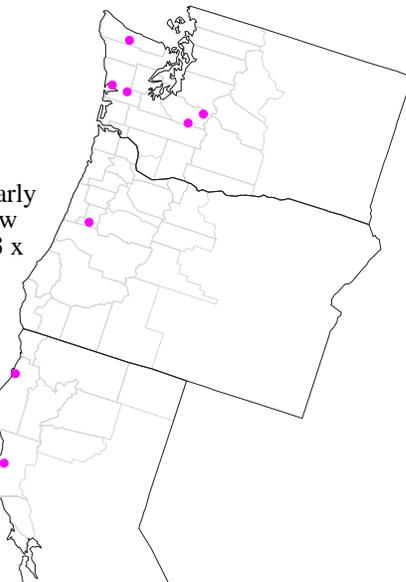
Photo courtesy of Dr. C. Marr

***Ramaria araiospora* Marr & Stuntz**ROD name *Ramaria araiospora*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 5-13 x 2-8 cm, base white to yellow-white, or discoloring brown-white, branches red in youth, pale red at maturity, apices nearly concolorous in primordial sporocarps, apices of mature sporocarps maize yellow or pale to deep orange, context concolorous. **STEM** single, slightly bulbous, 2-3 x 1.5 cm, sometimes nearly fasciculate, covered with a thin white basal tomentum; branching up to 6 times from the base, polychotomous to dichotomous, axils acute or turbinate and branches slight to moderately divergent, internodes elongated in mature sporocarps, branches mostly slender, 1-5 mm diam, some basal branches up to 4 cm diam, forked or finely divided near apices; apices acute to subacute. Consistency fleshy-fibrous when fresh, brittle when dried. **FLESH** of stem inamyloid; **PYR**, **ANW**, **GUA**, **PHN**, or **ANO** negative; occasionally exceptions occurring with **GUA**, and **ANW**. **ODOR** not distinctive. **TASTE** not distinctive. **FLESH HYPHAE** parallel near the surface to interwoven towards the base, parallel in the branches, mostly uninflated, some moderately inflated, 4-14  $\mu\text{m}$  in diam, walls smooth to slightly fluted, cyanophilic, thin, 0.25-1  $\mu\text{m}$ , ampulliform swellings near septa, 8-15  $\mu\text{m}$  in diam, walls of the vesicles moderately ornamented in the stem, slightly ornamented in the branches, crystalline masses occurring in the stem. **GLEOPLEROUS HYPHAE** present but infrequent, 3-4.5  $\mu\text{m}$  in diam. **SUBHYMENIA** of interwoven hyphae, 2-3  $\mu\text{m}$  in diam, thin-walled. **BASIDIA** clavate, 43-75 x 7-12  $\mu\text{m}$ , contents not granulate, 1-4 spored. **STERIGMATA** 4-8  $\mu\text{m}$  long, straight, erect or slightly divergent. **CLAMP CONNECTIONS** absent. **SPORES** subcylindrical, 8-13 x 3-4.5  $\mu\text{m}$ , (mean = 9.9 x 3.7), finely ornamented with cyanophilic warts.



**Distinguishing Features:** The two varieties of *R. araiospora* are separated on the sole characteristic of the presence or absence of yellow apices at maturity. *Ramaria subbotrytis* is coral pink when young, fading to creamy ochraceous when mature. The apices of *R. subbotrytis* tend to be rounded and those of *R. araiospora* subacute to acute.

**Distribution:** Endemic to the Pacific Northwest. Known from eight sites within the range of the northern spotted owl: **CALIFORNIA**, **Humboldt** Co., Big Lagoon; **Mendocino** Co., Jackson State Forest; **OREGON**, **Benton** Co., Bureau of Land Management, Salem District, Reese Creek; **WASHINGTON**, Clallam Co., Olympic National Park, Soleduc Falls; **Pierce** Co., Dalles Recreation Area; Mount Rainier National Park, Lower Tahoma Creek; **Gray's Harbor** Co., 10 miles west of Hoquiam; Lake Sylvia State Park.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**

Photo courtesy of Dr. C. Marr

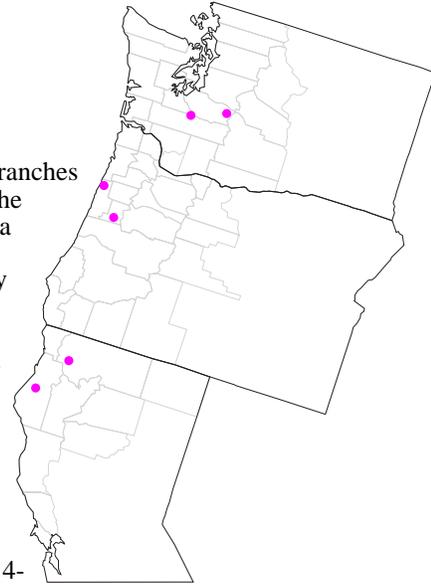


***Ramaria aurantiiscescens* Marr & Stuntz**ROD name *Ramaria aurantiiscescens*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 8-10 x 2-8 cm, white, upper base and lowest branches pale yellow to yellow, shading upwards into pale orange or orange-yellow, the apices nearly dark orange. **STEM** single to nearly compound, 1-4 x 1-2 cm, a thin, white basal tomentum present, branching 4-7 times from the base, polychotomous or dichotomous, axils acute to rounded and branches slightly divergent, internodes elongated up to 5 cm in length, branches 0.2-1 cm in diam, bifid to finely divided near apices; apices subacute. **FLESH** of stem fleshy-fibrous when fresh, inamyloid, ANW, GUA, PHN and ANO positive; PYR negative. **ODOR** slightly sweet. **TASTE** not distinctive. **FLESH HYPHAE** interwoven in the stem, parallel in the branches, uninflated to moderately inflated, 4-16  $\mu\text{m}$  in diam, thin-walled, smooth, nongelatinized, strongly cyanophilic, hyphae infrequently vesicular near a septum, up to 12  $\mu\text{m}$  in diam, walls of swellings nearly smooth in the branches, moderately ornamented in the stipe. **GLEOPLEROUS HYPHAE** rare, slender, 2-3  $\mu\text{m}$  in diam. **SUBHYMENIA** of thin-walled, interwoven hyphae, 3-4  $\mu\text{m}$  in diam. **BASIDIA** clavate, 45-60 x 8-12  $\mu\text{m}$ , 1-4-spored. **STERIGMATA** variable, mostly 4-7  $\mu\text{m}$ , up to 22  $\mu\text{m}$ . **CLAMP CONNECTIONS** absent. **SPORES** cylindrical to subpip-shaped, 8.5-14 x 3-5  $\mu\text{m}$ , (mean = 10.8 x 4), ornamented with fine, lobed, cyanophilic warts.



**Distinguishing Features:** Characterized by the yellow to orange sporocarps which lack clamp connections and are neither rubribrunnescent or vivescent, fleshy-fibrous consistency, positive reactions of ANW, GUA, PHN and ANO, and spores averaging 10.8 x 4.0  $\mu\text{m}$ . In the field it is difficult to distinguish *R. aurantiiscescens* from several other orange-colored *Ramaria* species of similar habit, *R. gelatiniaurantia*, *R. longispora* and *R. sandaracina* except by the positive macrochemical tests. In addition *R. sandaracina* has clamp connections on the hyphae, *R. gelatiniaurantia* has a gelatinous consistency, and *R. longispora* has longer, more coarsely warted spores.

**Distribution:** Endemic to the Pacific Northwest. Known from six sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Marble Mountain Wilderness Area, Haypress Meadows; **Humboldt Co.**, Fickle Hill Rd.; **OREGON**, Benton Co., Bureau of Land Management, Salem District, Reese Creek; **Lincoln Co.**, Siuslaw National Forest, junction of Rd. 1929 and 17; **WASHINGTON**, Lewis Co., Pleasant Valley; **Pierce Co.**, Dalles Recreation Area.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**

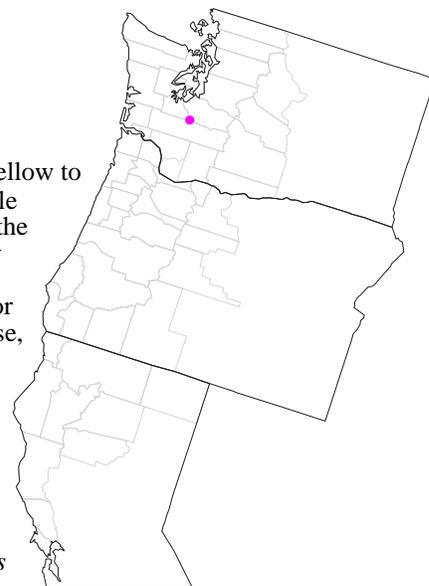
Photo courtesy of Dr. C. Marr

***Ramaria botrytis* var. *aurantiramosa* Marr & Stuntz**ROD name *Ramaria botrytis* var. *aurantiramosa*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 8-15 x 6-17 cm, opaque white, bruising pale yellow to gray-orange, primary branches concolorous with stem, terminal branches pale orange or a shade more brown. **FLESH** white. **STEM** single or fasciculate, if the latter then 2 or 3 stems present, tapering, massive, 3.5-8 x 3.5-6 cm, primary branches few, mostly 2 or 3, short to moderately elongate, thick, up to 3 cm diam, upper branch systems compacted on primary branches or stem, 3 cm or less in length, pluridigitate near apices; apices subacute, rounded, or nodulose, fleshy-fibrous when fresh, drying hard. **FLESH** of stem slowly and weakly amyloid; **PYR**, **PHN** and **ANO** negative; slight color changes with application of **ANW**, **GUA**, of thin to moderately thick-walled, hyphae. **SPORES** 12-16 x 4-6  $\mu\text{m}$ , (mean = 13.5 x 4.7), with a suprahilar depression and a dorsal and ventral convexity, striae steeply oblique, cyanophilic.



**Distinguishing Features:** The striate spores help distinguish *R. botrytis* var. *aurantiramosa* from most other *Ramaria* taxa. *Ramaria botrytis* var. *aurantiramosa* is distinguished from *Ramaria botrytis* var. *botrytis* by the orange coloration of the upper branches. It is separated from *R. rubripermanens* by its larger spores.

**Distribution:** Endemic to Washington. Known from a single site within the range of the northern spotted owl: **WASHINGTON, Lewis Co., Pleasant Valley.**

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Pseudotsuga menziesii* and *Tsuga heterophylla*.

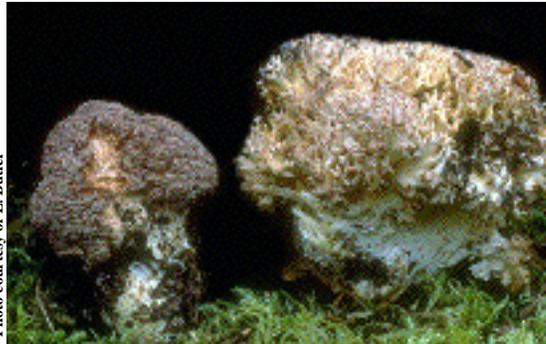
**Season:** Fruits in October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



Photo courtesy of Dr. C. Marr  
Photo courtesy of E. Butler

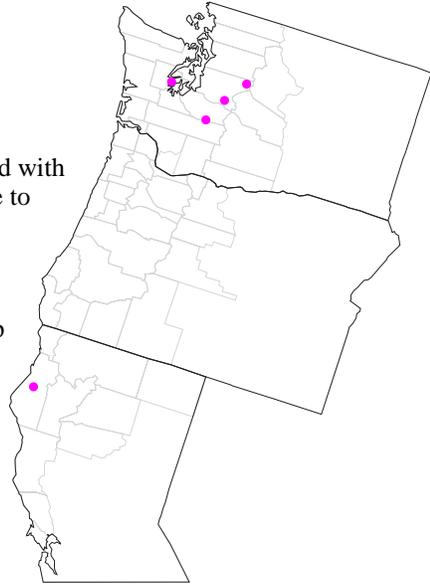


***Ramaria celerivirescens* Marr & Stuntz**ROD name *Ramaria celerivirescens*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 6-18 x 3-10 cm, white or yellow-white, covered with subareolate patches of brown to red-brown superficial hyphae, branches pale to pale orange, apices pale to yellow, a distinctive band of pale brown hyphae visible in the basal region of a radially sectioned stem, flesh of the branches subconcolorous or slightly more red than surface. **STEM** single, roughened, cylindrical or tapered, 2-7 x 1-3 cm, branching up to 10 times, axils acute to turbinate and branches slightly divaricate, lower branches with internodes up to 5 cm long and up to 1.3 cm in diam, upper branches bifid or multifid near apices, apices subacute to rounded, fleshy-fibrous. **FLESH** of stem slowly amyloid, instantly dark green with FSW, the brown band in the stem darkening with KOH; PYR, ANW, GUA, PHN and ANO negative; with more time GUA may become weakly positive. **FLESH** of interwoven hyphae, 6-11  $\mu\text{m}$  in diam in the stem, parallel hyphae, 3-20  $\mu\text{m}$  in diam in the branches, walls smooth or slightly fluted, moderately cyanophilic, thin-walled, cyanophilic inclusions sometimes conspicuous, hyphae frequently vesicular near a septum, 10-18  $\mu\text{m}$  in diam, vesicle walls distinctively ornamented in the stem, moderately so in the branches. **GLEOPLEROUS HYPHAE** rare, mostly 2.5-3.5  $\mu\text{m}$  in diam. **SUBHYMENIA** of thin-walled, interwoven hyphae, 3-5  $\mu\text{m}$  in diam. **BASIDIA** clavate, 41-70 x 7-11  $\mu\text{m}$ , 2-4-spored. **STERIGMATA** 3-8  $\mu\text{m}$  long, mostly straight, occasionally incurved, not divergent. **CLAMP CONNECTIONS** absent. **SPORES** subcylindrical with a prominent lateral apiculus, 8-11 x 4-6  $\mu\text{m}$ , (mean = 9.5 x 4.6), subcylindrical with a prominent lateral apiculus, apiculus up to 2 x 2  $\mu\text{m}$ , ornamented with coarse, irregularly shaped, cyanophilic warts, gray-yellow-orange spore print.



**Distinguishing Features:** Characterized by a flesh which instantly turns blue-green after application of FSW, a distinctive band of pale brown hyphae visible in the basal region of a radially sectioned stem, and amyloid flesh. *Ramaria celerivirescens* differs from *R. amyloidea* with respect to the occurrence of clamp connections, sporocarp form and spore ornamentation. *Ramaria velocimutans* is a third species which has a band of pale brown hyphae in the stem and reacts quickly with FSW, but it differs in its larger size and white sporocarps. *Ramaria formosa* discolors with handling and the hyphae have clamp connections.

**Distribution:** Endemic to California and Washington. Known from five sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Fickle Hill rd.; **WASHINGTON**, Mason Co., Mason Lake; **Pierce Co.**, Mount Rainier National Park, Lower Tahoma Creek; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Glacier Peak Wilderness, Sulphur Creek; **King Co.**, 10 miles east of Enumclaw.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. Biblio. Mycol. 38:1-232.

**NOTES:**



Photo courtesy of Dr. I. O'Dell  
Photo courtesy of Dr. C. Marr

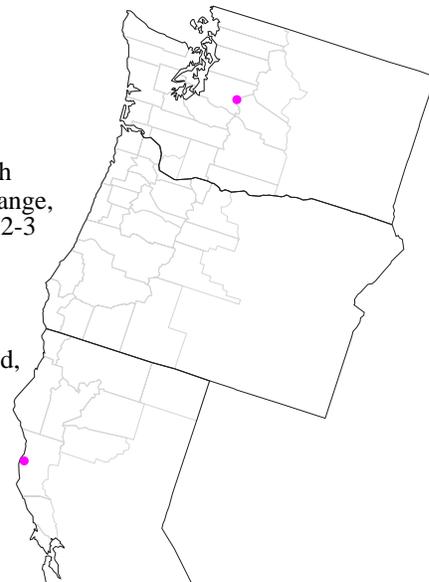


***Ramaria claviramulata* Marr & Stuntz**ROD name *Ramaria claviramulata*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 5-9 x 3.5-4.5 cm, brown-white, sometimes with subareolate regions of superficial hyphae of darker brown, branches gray-orange, apices mostly concolorous, flesh brown-white. **STEM** single or occasionally 2-3 in a fascicle, tapering, slender, 1.4 x 0.5-2 cm, branching dichotomous, axils acute and branches moderately divergent, internodes distinct but not greatly elongated, up to 3 cm, branches generally not diminishing greatly in diam upwards, some terminal branches distinctively enlarged, up to 1.5 cm broad, resembling some of the irregular clubs of *Clavariadelphus*, forked to antlered, apices rounded or blunt, fleshy-fibrous when fresh, drying hard. **FLESH** of stem inamyloid, FSW positive, KOH positive on fresh and dried specimens, dried sporocarps turning red; PYR, ANW, GUA, PHN and ANO negative. **ODOR** musty. **TASTE** bitter. **FLESH** thick-walled (1-4  $\mu\text{m}$ ), subparallel to interwoven hyphae, 5-9  $\mu\text{m}$  in diam in stem, thick-walled (0.25-2.5  $\mu\text{m}$ ), parallel hyphae 5-22  $\mu\text{m}$  in diam in branches, walls smooth or fluted, moderately cyanophilic, ampulliform inflations near septa rare, 13-20  $\mu\text{m}$  in diam, walls of swellings distinctly ornamented in the stem, less so in the branches. **GLEOPLEROUS HYPHAE** absent. **SUBHYMENIA** of thin-walled, interwoven hyphae 3-6  $\mu\text{m}$  in diam. **BASIDIA** clavate, 65-75 x 8-8.5  $\mu\text{m}$ , 2-4-spored. **STERIGMATA** 5-8  $\mu\text{m}$  long, straight, not divergent. **CLAMP CONNECTIONS** absent. **SPORES** elongate to ellipsoid, 9-10.5 x 4-5  $\mu\text{m}$ , (mean = 9.3 x 4.7), apiculus prominent up to 3 x 2  $\mu\text{m}$ , ornamented with fine, lobed, cyanophilic warts, some spores nearly smooth.



**Distinguishing Features:** Characterized by branches similar to the apices of *Clavariadelphus* species, positive reaction of the context to 10%  $\text{Fe}_2(\text{SO}_4)_3$ , red reaction of the hymenium to 20% KOH, the brown-colored sporocarps, thick-walled hyphae, spores with a large apiculus, and a thickening hymenium.

**Distribution:** Endemic to California and Washington. Known from two sites within the range of the northern spotted owl: **CALIFORNIA**, Mendocino Co., Van Damme State Park; **WASHINGTON**, King Co., Mount Baker-Snoqualmie National Forest, Goldmyer Hot Springs trail.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



Photo courtesy of Dr. C. Marr

***Ramaria concolor f. marrii*** PetersonROD name *Ramaria concolor f. marrii*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** up to 6 cm high, up to 4.5 cm broad, stipitate, repeatedly branched, arising from a white mycelial mat and white rhizomorphic strands. **STEM** red-tan, up to 1.5 cm long, bruising brown, branches lax, open to somewhat divaricate, mostly dichotomous, red-tan, axils open to lunate, concolorous to surrounding branches; apices delicate, digitate, cream tan to pale tan. **ODOR** indistinct or weakly of anise. **TASTE** bitter, weakly astringent, not acrid. **HYMENIUM** in FSW slowly slate green, purple-blue to purple-black with added ETOH; bright deep blue in GUA, yellow-brown to copper-brown in KOH; ANW, PYR, ANO negative. **CYSTIDIOID STRUCTURES** in hymenium hyphal, 1.5  $\mu\text{m}$  in diam, projecting from hymenial surface up to 40  $\mu\text{m}$ , thin-walled, gnarled, often once-branched, leptocystidial. **SPORES** elongate, ovoid to ellipsoid, 7.8-10 x 3.7-4.8  $\mu\text{m}$ , thin-walled, moderately cyanophilic, apiculus prominent, eccentric, truncate, ornamentation of obscure, low warts or ridges.



**Distinguishing Features:** Characterized by the amphigenous hymenium, the distinct sporocarp form and the size of the spores.

**Distribution:** Also known from Idaho. Known from a single site within the range of the northern spotted owl: **WASHINGTON**, **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Sloan Creek campground. It is also reported from one site in northern California with vague locality data.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** PETERSON, R.H. 1975. *Ramaria* subgenus *Lentoramaria* with emphasis on North American taxa. *Biblio. Mycol.* 43:1-161.

**NOTES:**



Photo courtesy of Dr. C. Marr

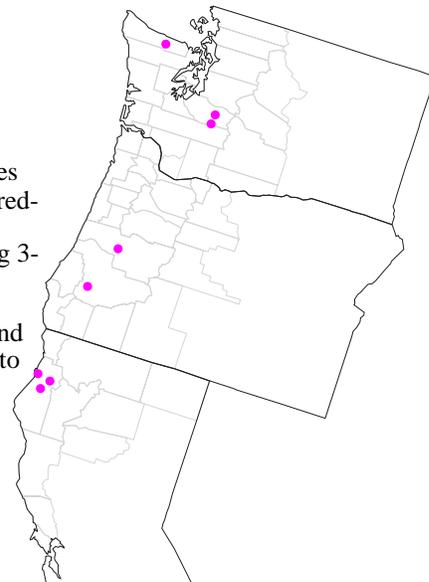
## *Ramaria cyaneigranosa* Marr & Stuntz

ROD name *Ramaria cyaneigranosa*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPORO CARPS** 4-12 x 2-11 cm, white, branches pale red, apices sometimes nearly concolorous, usually minutely dotted with pale yellow or red-yellow. **STEM** single or branched at base, 0.5-3.5 x 0.4-3 cm, arising from a slender, taproot-like structure, frequently thick or slightly bulbous; branching 3-5 times from base, lower nodes usually polychotomous, branches frequently connate, axils acute to u-shaped and branches slightly divergent, internodes often short, especially upper ones, branches slender to somewhat flattened and wider, shortly furcate, polydigitate or nodulose near apices, apices subacute to rounded, fleshy-fibrous when fresh, drying brittle. **FLESH** of stem inamyloid, PHN and ANO positive; occasional weak reactions with GUA, PYR, and ANW. **ODOR AND TASTE** not distinctive. **FLESH** of parallel to interwoven hyphae 3-10  $\mu\text{m}$  in diam with crystalline masses, of thin-walled, parallel, inflated hyphae 3-20  $\mu\text{m}$  in diam in the branches, all walls smooth and cyanophilic, ampulliform inflations near septa, 9-14  $\mu\text{m}$  in diam, walls of the swellings slightly ornamented, false clamp connections sometimes present. **SUBHYMENIA** of thin-walled, interwoven hyphae, 2-5  $\mu\text{m}$  in diam. **BASIDIA** clavate, 49-80 x 6.12  $\mu\text{m}$ , cyanophilic, 1-4-spored. **STERIGMATA** 4-10  $\mu\text{m}$  long, straight or slightly incurved, slightly divergent or erect. **GLEOPLEROUS HYPHAE** present, 2-4 (-6)  $\mu\text{m}$  in diam. **CLAMP CONNECTIONS** absent. **SPORES** subcylindrical, 8-15 x 4-6  $\mu\text{m}$ , (mean = 11.0 x 4.6), ornamented with distinct, irregularly shaped cyanophilic warts, pale yellow spore print.



**Distinguishing Features:** Characterized by its red sporocarp, spores 4.5  $\mu\text{m}$  or wider, with verrucose ornamentations, and red to violet brown reactions with PHN and ANO. *Ramaria stuntzii* is bright scarlet in youth, and is easily distinguished by its robust habit and amyloid context. *Ramaria cyaneigranosa* is red to salmon, and *R. araiospora* is magenta red, at least in var. *rubella*. The three varieties of *R. cyaneigranosa* are separated on sporocarp color, form, and spore length. *Ramaria cyaneigranosa* var. *cyaneigranosa* has the longest spores, the most intensely red branches, and yellow tips.

**Distribution:** Endemic to the Pacific Northwest. Known from eight sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Big Lagoon; Big Hill Rd.; Lord Ellis Summit; **OREGON**, Douglas Co., Bureau of Land Management (BLM), Roseburg District, Irwin Rocks Reseach Natural Area; Lane Co., BLM, Salem District, Scattered Tracts South; **WASHINGTON**, Clallam Co., Olympic National Park, Lake Creek trail; Pierce Co., Mount Rainier National Park, lower Tahoma Creek; Mount Rainier National Park, Ipsut Creek.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



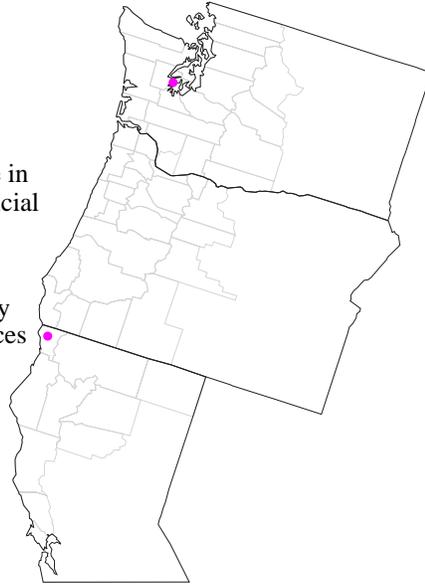
Photo courtesy of Dr. C. Marr

***Ramaria fasciculata* var. *sparsiramosa* Coker**ROD name *Ramaria fasciculata* var. *sparsiramosa*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS up to 6 x 4 cm, subspherical to broadly obovate in outline. STEM fasciculate with up to 10 individuals, loosely bound by superficial white tomentum, slender, up to 4 mm thick, rooting somewhat, white where protected. Branches of individual sporocarps in 2-4 ranks, up to 3 mm thick below, 2 mm or less above, terete, fleshy pallid salmon to salmon colored to pale tan, flesh solid to locally hollow, white, somewhat stringy, axils narrowly rounded, internode ratio diminishing rather abruptly apically in maturity, apices pale yellow, minutely double-dichotomous when young, minutely digitate by maturity. ODOR negligible to mildly aromatic. TASTE negligible to mildly fabaceous. MACROCHEMICAL REACTIONS not recorded. FLESH of parallel, thin-walled, hyaline hyphae up to 10  $\mu\text{m}$  in diam in branches. BASIDIA 45-55 x 6-7  $\mu\text{m}$ , clavate, 4-spored. CLAMP CONNECTIONS absent. SPORES broadly ovate to broadly cylindrical, 7.2-9.7 x 4.7-5.8  $\mu\text{m}$ , obscurely roughened, small warts often indiscernable.



**Distinguishing Features:** *Ramaria conjunctipes* produces smaller, more slender, less branched sporocarps, and has smaller spores (6-10 x 4-6.5  $\mu\text{m}$ ). Spores of *R. fasciculata* var. *tsugensis* are apparently identical with spores of *R. fasciculata* var. *sparsiramosa* associated with western hemlock. It is likely that *R. fasciculata* var. *tsugensis* does not differ significantly from *R. fasciculata* var. *sparsiramosa* and that further study will conclude that they are synonymous.

**Distribution:** Endemic to California and Washington. Known from two sites within the range of the northern spotted owl: CALIFORNIA, Del Norte Co., Jedediah Smith Redwoods State Park; WASHINGTON, Mason Co., Mason Lake.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in November.

**References:** PETERSON, R.H. 1982. Contributions toward a monograph of *Ramaria*. V. Type specimen studies of taxa described by W.C. Coker. *Sydowia* 35:176-205.

**NOTES:**

Photo courtesy of Dr. C. Marr



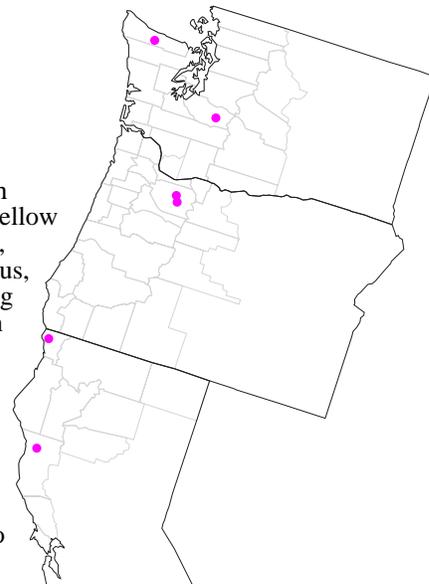
## *Ramaria gelatiniaurantia* Marr & Stuntz

ROD name *Ramaria gelatiniaurantia*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 6-22 x 4-11 cm, white, pale yellow to yellow immediately above substrate, exposed branches and apices orange, stem flesh marbled, translucent gray-white alternating with waxy opaque-white areas, yellow at least in the ultimate branches. **STEM** compound, up to 9 branches, connate, gelatinous primary axes in various stages of development, mostly dichotomous, axils acute to turbinate and branches scarcely divergent, internodes elongating up to 4 cm in length, lower branches sometimes laterally fused, up to 2 cm in diam, upper branches slender, commonly 1-4 mm in diam, forked to finely divided near the apices; apices mostly acute, gelatinous, especially in the base when fresh. **FLESH** in stem inamyloid, **PYR**, **ANW**, **GUA**, **PHN** and **ANO** negative. **ODOR** fabaceous. **TASTE** not distinctive. **FLESH** of interwoven hyphae, 3-5  $\mu$ m in diam in the stem, of thin-walled, parallel hyphae 3-12  $\mu$ m in diam in the branches, walls smooth, surrounded by gelatinous matrix, cyanophilic globular inclusions common, hyphae frequently vesicular near septa, 9-17  $\mu$ m in diam, walls of the swellings up to 2  $\mu$ m in diam, ornamented in the stipe, less ornamented in the branches. **GLEOPLEROUS HYPHAE** rare, 2-3.5  $\mu$ m diam. **SUBHYMENIA** of thin-walled, interwoven, 2-3  $\mu$ m in diam. **BASIDIA** clavate, 70-82 x 8-11  $\mu$ m, 4-spored. **STERIGMATA** 4-5  $\mu$ m long, straight. **CLAMP CONNECTIONS** absent. **SPORES** subcylindrical, 8-11 x 3.5-5  $\mu$ m, (mean = 9.3 x 4.1), ornamented with small, cyanophilous warts.



**Distinguishing Features:** Characterized by a gelatinous, orange sporocarp that does not bruise or when it does it is dull violet, with a yellow band on the stem, and with spores averaging 9.3 x 4.1  $\mu$ m. *Ramaria sandracina* differs by having clamp connections. *Ramaria gelatiniaurantia* var. *gelatiniaurantia* and *R. gelatiniaurantia* var. *violetinges* are separated from each other by the color of the apices, the macrochemical reaction with GUA, and the prominence or rarity of gleoplerous hyphae in the base.

**Distribution:** Endemic to the Pacific Northwest. Known from six sites within the range of the northern spotted owl: **CALIFORNIA**, **Del Norte** Co., Jedediah Smith State Park, Howland Hill Rd.; **Mendocino** Co., Northern California Coast Range Preserve, Elder Creek; **OREGON**, **Clackamas** Co., Mount Hood National Forest, near south fork of Eagle Creek; Mount Hood National Forest, junction of Rd. 4610 and 150; **WASHINGTON**, **Clallam** Co., Olympic National Park, Soleduc Falls; **Pierce** Co., Mount Rainier National Park, Ipsut Creek.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. C. Marr

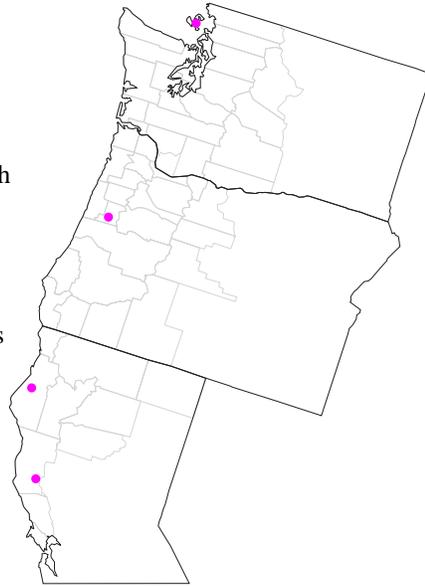


**Ramaria gracilis** (Pers. ex Fries) QuéletROD name *Ramaria gracilis*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 2.5 x 2 cm, pale orange, apices milk white, flesh white. **STIPE** single, slender, 0.3 x 0.2 cm, with a distinct felty white basal tomentum and rhizomorphic strands, branching about 5 times from the stem, dichotomous to polychotomous, axils mostly acute and branches slightly divergent, lower internodes elongated to approximately 0.6 cm, branches maximum diameter about 2 mm, sometimes flattened at nodes and terminal nodes slightly flabellate, bifid to cristate near apices; apices acute, coriaceous when fresh. **FLESH** of stem inamyloid, **PYR**, **ANW**, **GUA**, **PHN**, and **ANO** negative. **ODOR AND TASTE** not recorded. **RHIZOMORPHS AND MYCELIAL STRANDS** dimitic, thin-walled, clamped, generative hyphae, 2-3  $\mu\text{m}$  in diam, skeletal hyphae straight, 1.2-2.5  $\mu\text{m}$  in diam, thick-walled to the point of closing the lumen; hyphae of the tomentum narrow, about 2  $\mu\text{m}$  in diam. **FLESH** of interwoven hyphae in the stem, of parallel hyphae in the branches, dimitic, generative hyphae, thin-walled, 3-10  $\mu\text{m}$  in diam, ampulliform inflations near septa 9-13  $\mu\text{m}$  in diam, walls of the swellings smooth to delicately ornamented, skeletal hyphae 3-6  $\mu\text{m}$  in diam, straight to undulated in outline, thick-walled, 0.5-2 (-3)  $\mu\text{m}$  in diam, strongly cyanophilic and conspicuously differentiated from generative hyphae when stained in cotton blue. **GLEOPLEUROUS HYPHAE** not observed. **SUBHYMENIA** of thin-walled, compactly interwoven, 2-3  $\mu\text{m}$  in diam. **BASIDIA** clavate, 37-48 x 5-7  $\mu\text{m}$ , 4-spored. **STERIGMATA** 4-6  $\mu\text{m}$  long, straight, not divergent. **CLAMP CONNECTIONS** common. **SPORES** ellipsoid to ovoid with a prominent apiculus, 5-6.5 x 3.5-4  $\mu\text{m}$ , (mean = 5.3 x 3.5), delicately ornamented with shallow, lobed, cyanophilic warts in subspiral arrangement.



**Distinguishing Features:** Characterized by possession of small, delicately ornamented, broadly cylindrical to ovoid spores, and skeletal hyphae with strongly cyanophilic walls.

**Distribution:** Also known from Europe. Known from four sites within the range of the northern spotted owl: **CALIFORNIA**, Mendocino Co., Jackson State Forest; **Humboldt Co.**, near Arcata, Fickle Hill; **OREGON**, Benton Co., Beaver Creek; **WASHINGTON**, San Juan Co., Friday Harbor.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October and November.

**References:** PETERSON, R.H. 1982. Contributions toward a monograph of *Ramaria* V. Type specimen studies of taxa described by W.C. Coker. *Sydowia* 35:176-205.

**NOTES:**



Photo courtesy of Dr. C. Marr

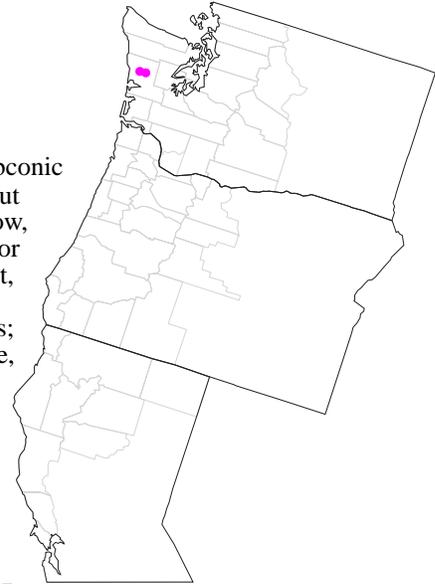
***Ramaria hilaris* var. *olympiana*** PetersonROD name *Ramaria hilaris* var. *olympiana*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** up to 10 x 6 cm, broadly fusiform to broadly obconic in outline. **STEM** up to 17 x 13 mm, single, tapering to a point, smooth, without abortive branchlets, rubbery in texture, off-white at base, upward bright yellow, surface slippery although not moist, flesh firm-gelatinous, translucent, more or less hyaline, white outward, branches ascending, erect to somewhat divergent, more or less terete, bright yellow below, upward a lively pallid salmon, flesh firm-gelatinous, brittle, progressively more yellow upward, with no pink tints; internodes diminishing gradually upward; axils rounded to minutely turbinate, apices minutely digitate when young, usually dichotomous, elongating somewhat by maturity, bright yellow, hardly fading in maturity. **ODOR** faintly fabaceous. **TASTE** indistinct. **FLESH** of stem SYR weakly positive, FCL positive, ANW, PHN, PYR equivocal to weakly positive, ANO, GUA, NOH, IKI, TYR, KOH negative. **TRAMA** of stem of hyaline, thin-walled, tightly interwoven hyphae 4-16  $\mu\text{m}$  in diam, with occasional lacunae of agglutinating material, ampulliform inflations usually at septa, up to 21  $\mu\text{m}$  broad, wall up to 1  $\mu\text{m}$  thick, with extensive stalactitiform ornamentation.

**TRAMA** of upper branches, of tightly packed, thin-walled, parallel hyphae 4-17  $\mu\text{m}$  in diam, inflated (especially inward), wall occasionally torulose, especially near septa, ampulliform inflations at septa, symmetrical, thin-walled, occasionally with delicate stalactitiform ornamentation. **GLOEOPLEROUS HYPHAE** occasional, 3-4  $\mu\text{m}$  in diam, equal, yellow, tortuous. **BASIDIA** 57-68 x 8-9  $\mu\text{m}$ , clavate, contents with scattered minute granules and small guttules, 4-spored. **STERIGMATA** slender, straight. **CLAMP CONNECTIONS** absent. **SPORES** ellipsoid, 9.4-11.2 x 4.0-5.0  $\mu\text{m}$ , yellow, thin-walled, ornamentation of scattered small, flat, occasionally lobed warts.



**Distinguishing Features:** Characterized by a gelatinous trama and the lack of clamp connections on the basidia. Similar to *R. gelatinaurantia*.

**Distribution:** Endemic to Washington. Known from a single site within the range of the northern spotted owl: WASHINGTON, Gray's Harbor Co., near Humtulip. Also known from one report with vague locality data from Jefferson Co., Washington.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii* and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** PETERSON, R.H. AND SCATES, C. 1988. Vernal fruiting taxa of *Ramaria* from the Pacific Northwest. Mycotaxon 33:101-144.

**NOTES:**

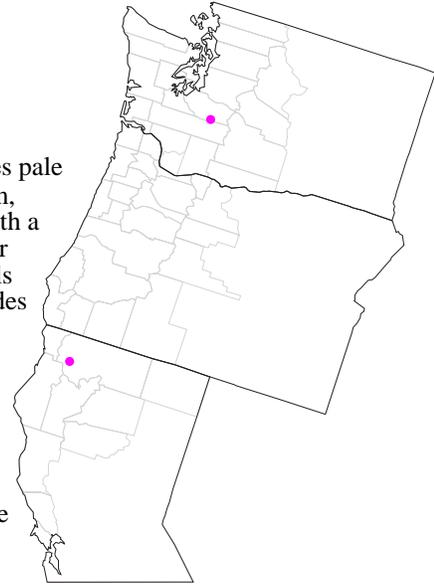
No Photograph Available

***Ramaria largentii* Marr & Stuntz**ROD name *Ramaria largentii*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 12-15 x 7-14 cm, white to pale yellow, branches pale orange, concolorous or more orange towards the apices. **STEM** up to 4 x 5 cm, single or subfasciculate (up to 9 branches), cylindrical or broadly conical, with a basal tomentum, small abortive branches frequently diverging from the upper base, mostly polychotomous in the lower nodes and dichotomous above, axils subacute to u-shaped, branches subparallel to moderately divaricate, internodes of mature sporocarps elongated, the lower ones up to 4 cm long, branches slender, generally less than 1 cm in diam, bifid to multifid near the rounded apices, fleshy-fibrous when fresh, drying brittle with chalky-friable properties. **FLESH** of stem white, the subsurface of branches concolorous becoming paler towards the center. **ODOR** slightly sweet. **TASTE** not distinctive. **FLESH** inamyloid, ANW and GUA positive, PYR, PHN, and ANO negative. **FLESH** a loosely interwoven tomentum covering stem, cells 2.5-3.5  $\mu\text{m}$  in diam, context of the stem compactly interwoven, parallel in the branches, 4-15  $\mu\text{m}$  in diam, walls smooth, cyanophilous, thin-walled, occasionally hyphae ampulliform near septa, 7-20  $\mu\text{m}$  in diam, walls of the swellings slightly ornamented in the stem. **GLEOPLEROUS HYPHAE** common, 2.5-4 (-9)  $\mu\text{m}$  in diam. **SUBHYMENIA** of thin-walled, compactly interwoven hyphae, 2.5-5  $\mu\text{m}$  in diam. **BASIDIA** clavate, 65-102 x 9-13  $\mu\text{m}$ , mostly 4-spored. **STERIGMATA** 3-8  $\mu\text{m}$  long, incurved or straight, slightly divergent. **CLAMP CONNECTIONS** present. **SPORES** subcylindrical, 11-15 x 3.5-5  $\mu\text{m}$ , (mean = 13.4 x 4.5), ornamented with conspicuous, irregularly shaped, cyanophilic warts, golden yellow spore print.



**Distinguishing Features:** Characterized by the large, conspicuously ornamented spores 11-15 x 3.5-5  $\mu\text{m}$ . *Ramaria longispora* differs in the lack of clamp connections, and in its slender habit, compound stem.

**Distribution:** Endemic to California and Washington. Known from two sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Marble Mountain Wilderness Area, Haypress Meadows; **WASHINGTON**, Pierce Co., Mount Rainier National Park, lower Tahoma Creek.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



Photo courtesy of Dr. C. Marr  
Photo courtesy of E. Butler

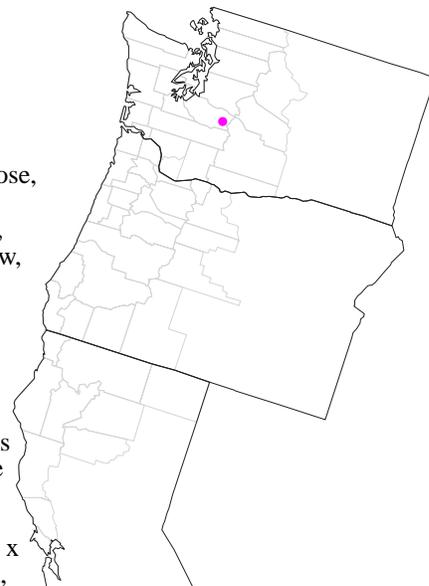
Photo available only in print version

***Ramaria lorithamnus* (Berk.) Peterson**ROD name *Ramaria lorithamnus*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** up to 8 x 4.5 cm, fasciculate or densely caespitose, branched, individual sporocarps branched once or twice (rarely three times), slender. **STEM** almost absent, up to 1 x 4 mm, smooth, white where protected, cream colored. Major branches 2, terete, erect, yellow to slightly green-yellow, brighter below when young, axils narrowly rounded, internodes diminishing gradually, apices awl-shaped, pale yellow, especially when young, bruises sometimes vinescent, then rusty brown. **ODOR** faintly fabaceous. **TASTE** indistinct to weakly fabaceous. **FLESH** of stem inamyloid, **PYR** negative; **KOH**, **NOH**, **PHN** rusty brown; **GUA** slowly, weakly positive; **FCL** slowly green-black; **ANO** ambiguous. **TRAMA** of branches of hyphae 3-7.5  $\mu\text{m}$  in diam, thin-walled, parallel, somewhat inflated, of two types: (i) homogeneous in content, and (ii) with submottled contents under phase contrast, suggestive of gloeoplerous consistency. **TRAMA** of stem similar to branches, ampulliform septa common, up to 10  $\mu\text{m}$  wide, somewhat thick-walled, unornamented. **SUBHYMENIUM** of hyphae 1.5-2.5  $\mu\text{m}$  in diam. **BASIDIA** 60-70 x 9-12  $\mu\text{m}$ , clavate, 4-spored. **STERIGMATA** up to 7  $\mu\text{m}$  long, somewhat curved, erect. **CLAMP CONNECTIONS** absent. **SPORES** ovate to ellipsoid, 7.9-9.4 x 4.7-5.8  $\mu\text{m}$ , thin-walled, hilar appendix papillate, ornamentation of meandering low warts and ridges.



**Distinguishing Features:** Characterized by the lack of clamp connections, and the fasciculate, sparingly branched sporocarp that lacks any pink or salmon coloration.

**Distribution:** A South Pacific disjunct, known from Australia and New Zealand. Known from a single site within the range of the northern spotted owl: **WASHINGTON, Pierce Co.**, Mount Rainier National Park, Frying Pan Creek trail.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in September.

**References:** **PETERSON, R.H.** 1988. Contributions toward a monograph of *Ramaria* VII: New taxa and miscellany. *Mycologia* 80:223-234.

**NOTES:**



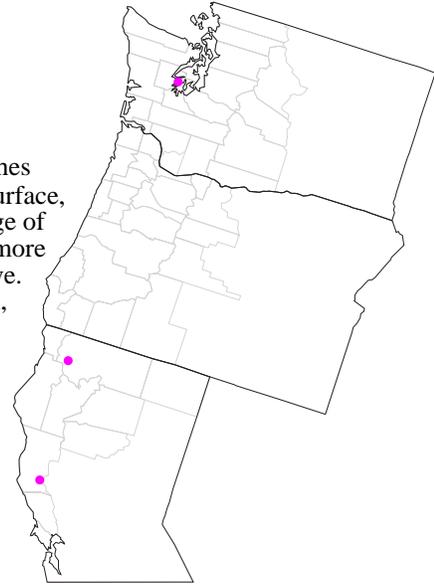
Photo courtesy of Dr. C. Marr

***Ramaria maculatipes* Marr & Stuntz**ROD name *Ramaria maculatipes*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 10 x 6 cm, orange white, base and lower branches staining red, branches peach, apices pale yellow, context concolorous with surface, generally drying paler than gray-orange, upper branches retaining a faint tinge of salmon and stained areas dark red-brown, the flesh orange white or slightly more salmon in the upper branches, water-marbled. **ODOR AND TASTE** not distinctive. **STEM** single, tapering, 2-4 x 1.5-2 cm, branching up to 7 times from the stem, nodes frequently polychotomous, axils acute or turbinate and branches moderately divergent, internodes elongated up to 3 cm, lower branches up to 2.5 cm in diam, upper branches mostly 2-6 mm in diam; polydigitate or polynodulose near rounded apices, fleshy-fibrous. **FLESH** of stem slowly amyloid, GUA blue; PYR, ANW, PHN and ANO negative. **FLESH** of the stem of compactly interwoven, parallel in the branches, 4-13  $\mu\text{m}$  in diam, walls of the branches slightly fluted, thin-walled in the branches, slightly thicker in the stem, cyanophilic, vesiculation of cells near septa rare. **GLEOPLEUROUS HYPHAE** abundant in the stem, rare in the branches, forming bulbous regions 8-20  $\mu\text{m}$  in diam, except for these localized regions the diameter 4-6  $\mu\text{m}$ . **SUBYHMENIA** thin-walled, interwoven hyphae, 2-4  $\mu\text{m}$  in diam. **BASIDIA** clavate, 57-80 x 8-9  $\mu\text{m}$ , 4-spored. **STERIGMATA** 2-5  $\mu\text{m}$  long, straight or slightly incurved, slightly divergent. **CLAMP CONNECTIONS** present. **SPORES** subcylindrical, 9-11 x 4-5  $\mu\text{m}$ , (mean = 10.2 x 4.3), ornamented with fine, cyanophilic warts in subspirals, gray-orange spore print.



**Distinguishing Features:** Characterized by its clamp connections, an amyloid context, red-brown stains or bruises, and negative macrochemical tests. *Ramaria maculatipes* is readily distinguished by sporocarp color or macrochemical reactions other than amyloidity. *Ramaria rubribrunnescens* has approximately the same sporocarp color and staining as *R. maculatipes*, but has an inamyloid context, lacks clamp connections, and has large, striate spores.

**Distribution:** Endemic to California and Washington. Known from three sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Marble Mountain Wilderness Area, Haypress Meadows; **Mendocino** Co., Jackson State Forest; **WASHINGTON**, Mason Co., Mason Lake.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in November.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



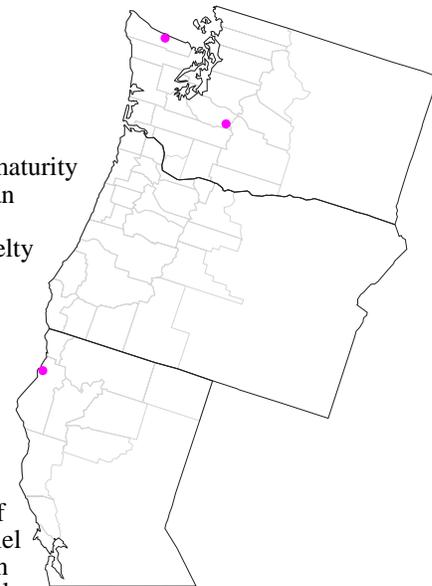
Photo courtesy of Dr. C. Marr

***Ramaria rainierensis*** Marr & StuntzROD name *Ramaria rainierensis*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS 2-8 x 0.4-7 cm, yellow-white when young, at maturity pale gray-orange, basal tomentum white, terminal branches slightly paler than lower ones, flesh orange-white to brown, dried sporocarps pale gray-orange, context orange-white. STEM single, slender, 0.5-3.5 x 0.2-1 cm, with basal felty tomentum, surface scurry; branching mostly dichotomous, axils subacute to narrowly u-shaped, branches slightly divergent, slender, 2-8 mm in diam, slightly flattened especially at nodes, internodes varying from 0.2-2.5 cm in length, shortly forked, cristate or rarely single near acute apices, consistency coriaceous when fresh, drying brittle. **ODOR** negligible in young sporocarps, in older sporocarps resembling anise. **TASTE** bitter. **FLESH** of stem inamyloid; PYR, ANW, GUA and ANO positive. **RHIZOMORPHS** dimitic, generative hyphae 2-3.5  $\mu$ m in diam, ampulliform inflations near septa common, 8-16  $\mu$ m in diam, walls of the swellings ornamented, skeletal hyphae 2-6  $\mu$ m in diam, straight, walls 1-3  $\mu$ m thick, acyanophilic. **FLESH** of the stem of parallel hyphae near the surface, otherwise interwoven, subparallel in the branches, dimitic, branches mostly with generative hyphae, 3-10  $\mu$ m in diam, walls smooth, slightly cyanophilic, thin-walled, skeletal hyphae sparsely distributed in the stem, thick-walled, 1.5-3  $\mu$ m in diam. **GLEOPLEROUS HYPHAE** absent. **SUBHYMENIA** of thin-walled, interwoven hyphae 2-3.5  $\mu$ m in diam. **BASIDIA** clavate, 50-77 x 7-11  $\mu$ m, cyanophilic, 1-5-spored. **STERIGMATA** 4-9  $\mu$ m long, straight or slightly incurved, slightly divergent. **CLAMP CONNECTIONS** present. **SPORES** ellipsoid with a prominent lateral apiculus that is commonly 1 x 1.5  $\mu$ m, 7-10 x 4.5-6  $\mu$ m, (mean = 8.5 x 5), ornamented with distinct, cyanophilic warts arranged in subspirals, apricot yellow spore print.



**Distinguishing Features:** Characterized by a terrestrial habit, cream to tan-colored sporocarps, and skeletal hyphae with nearly acyanophilic walls.

**Distribution:** Endemic to California and Washington. Known from two sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., Patrick's Point State Park; **WASHINGTON**, Pierce Co., Mount Rainier National Park, Panther Creek, near intersection of Rd. 123.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with *Abies* spp., *Pseudotsuga menziesii*, and *Tsuga heterophylla*.

**Season:** Fruits in December and March.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**

No Photograph Available

***Ramaria rubella* var. *blanda*** PetersonROD name *Ramaria rubella* var. *blanda*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS up to 8 cm high, up to 5.5 cm broad, fusiform to subspherical, lignicolous. **ODOR** indistinct. **TASTE** acrid. **STEM** almost branched from base, up to 1 cm thick, with basal mycelium, white at base. **BRANCHES** up to 4 mm thick, more or less strict to open and spreading, often flattened, especially at axils, and then branching somewhat antler-like, pink-tan, pale pink-cinnamon, pale vinaceous cinnamon, to avellaneous, internodes diminishing gradually, axils narrowly to broadly rounded, usually sterile. **FLESH** white, tough. **HYMENIUM** usually unilateral, smooth, sterile surface rugulose, apparently somewhat paler than hymenium, apices delicate and erect to open and rounded, white to pale cream color, FSW deep olive-grey. **BASIDIA** 45-50 x 7.4-8.9  $\mu\text{m}$ , clavate, 4-spored. **STERIGMATA** straight, divergent, peripheral. **CLAMP CONNECTIONS** present. **SPORES** broadly ovoid to broadly ellipsoid, 6.3-8.1 x 4.4-5.9  $\mu\text{m}$ , ornamentation of scattered prominent warts or short meandering ridges, red-tan spore print, thin-walled, apiculus prominent, eccentric, over 1  $\mu\text{m}$  long, often with hump at upper base, tapering distally.



**Distinguishing Features:** Characterized by the absence of bright pink coloration of the rhizomorphic strands in KOH, slightly smaller spores than variety *rubella*, and a distinctly unilateral hymenium. *Ramaria rubella* f. *blanda* is similar to *R. polonica*, but *R. polonica* usually has cystidioid elements in the hymenium.

**Distribution:** A rare bicoastal endemic known from California, Washington and the Appalachian Mountains. Known from two sites within the range of the northern spotted owl: **CALIFORNIA, Humboldt Co.**, Patrick's Point State Park; **WASHINGTON, San Juan Co.**, Friday Harbor.

**Substrate and habitat:** Fruits on wood in conifer forests.

**Season:** Fruits in October.

**References:** PETERSON, R.H. 1975. *Ramaria* subgenus *Lentoramaria* with emphasis on North American Taxa. *Biblio. Mycol.* 43:1-161.

**NOTES:**



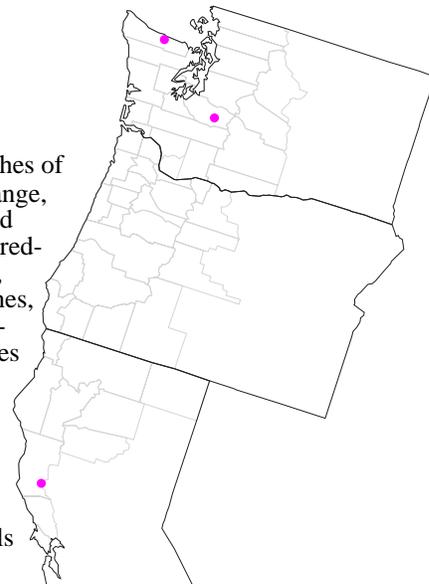
Photo courtesy of Dr. C. Marr

***Ramaria rubribrunnescens* Marr & Stuntz**ROD name *Ramaria rubribrunnescens*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 7-16 x 5.5-11 cm, white to orange-white, branches of immature sporocarps red with pale yellow apices, in age than pale brown-orange, base and lower branches stain red, context concolorous with the surface, dried sporocarps generally gray-pale yellow, stained regions retaining some of the red-brown color, flesh pale yellow. **STEM** single, frequently slender and tapering, older sporocarps a subfascicle of several to numerous slender primary branches, mostly dicotomous at least in the upper nodes, axils subacute or narrowly u-shaped, branches slightly divergent, internodes elongated at maturity, branches generally slender, mostly 1-5 mm in diam, bifid to finely divided near acute to rounded apices, consistency fleshy-fibrous when fresh, drying brittle and chalky-friable. **ODOR** sweet in age, resembling anise. **TASTE** indistinct. **STIPE CONTEXT** inamyloid; weak reaction to ANW and GUA; PYR, PHN and ANO negative. **FLESH** of interwoven hyphae in the stem, parallel in the branches, 2-6  $\mu\text{m}$  in diam in the stem, 4-13  $\mu\text{m}$  in diam in the branches, conspicuous cyanophilic globules present in hyphae of branches, hyphal walls smooth or fluted, moderately cyanophilic, walls 0.25-1.5 (-2)  $\mu\text{m}$  thick, ampulliform inflations near septa infrequent, 9-12  $\mu\text{m}$ , walls of the swellings moderately ornamented in the stipe, nearly smooth in the branches. **GLEOPLEROUS HYPHAE** not abundant, mostly 2-4.5  $\mu\text{m}$  diam. **SUBHYMENIA** of thin-walled, interwoven hyphae, 2.5-4  $\mu\text{m}$  in diam. **BASIDIA** clavate, 41-67 x 8-11  $\mu\text{m}$ , hymenial cells strongly cyanophilic, 2-4-spored. **STERIGMATA** 5-7  $\mu\text{m}$  long, slightly incurved and divergent. **CLAMP CONNECTIONS** absent. **SPORES** subcylindrical, 10-14 x 3.5-5  $\mu\text{m}$ , (mean = 12.3 x 4.4), cyanophilic, ornamentation very fine, some spores smooth or nearly so, gray-yellow spore print.



**Distinguishing Features:** Characterized by red-brown stains and lack of clamp connections. *Ramaria cystidiophora* var. *maculans*, *R. maculatipes*, *R. vinosimaculans*, and *R. rubiginosa* also develop these red-brown stains. *Ramaria rubribrunnescens* differs from these species by its lack of clamp connections and longer spores.

**Distribution:** Endemic to California and Washington. Known from two sites within the range of the northern spotted owl: **CALIFORNIA, Mendocino Co.**, Jackson State Forest; **WASHINGTON, Pierce Co.**, Mount Rainier National Park, Ipsut campground. It is also reported from the Olympic Peninsula with vague locality data.

**Substrate and habitat:** Fruits in humus or soil and matures above the surface of the ground. Associated with Pinaceae spp.

**Season:** Fruits in October and November.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**

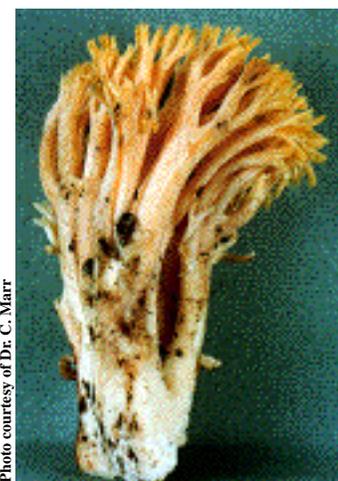


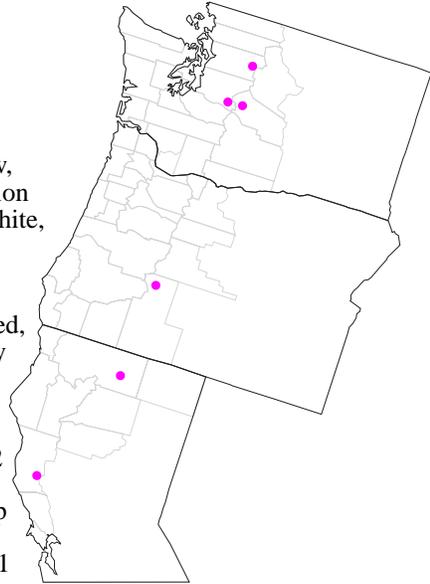
Photo courtesy of Dr. C. Marr

***Ramaria rubrievanescens* Marr & Stuntz**ROD name *Ramaria rubrievanescens*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS 7-8 x 6.5-8.5 cm, milk-white discoloring yellow, bruising brown-violet, primordial branch tips flushed with pink, pink coloration fades during maturation and soon after collecting, mature branches yellow-white, flesh white. STIPE single, massive, 3.5-9 x 2-4.5 cm, branches crowded, vertically compressed on the stipe and curving inwards about 1-4 cm long, lower branches usually very short and broad, 2-4 cm in diam, connation frequent in lower parts, upper branches mostly 1-4 mm in diam, axils u-shaped, slightly divergent, bifurcate to pluridigitate near obtuse, rounded or decidedly blunt apices, consistency punky firm when fresh. ODOR faintly sweet. TASTE slightly similar to nuts. FLESH of stem slowly amyloid; PYR, ANW, GUA, PHN, and ANO negative. FLESH of interwoven, mostly thin-walled hyphae, wall surface smooth to fluted, ampulliform swellings near septa 9-12  $\mu\text{m}$  diam, walls of the swellings distinctly ornamented. GLEOPLEROUS HYPHAE throughout context, generally 3-5  $\mu\text{m}$  in diam, in vesicular regions up to 12  $\mu\text{m}$  in diam. SUBHYMENIA of thin-walled, interwoven hyphae, 2.5-4.5  $\mu\text{m}$  diam, with globular cyanophilic inclusions. BASIDIA clavate, 55-87 x 8-11  $\mu\text{m}$ , (2-) 4-spored. STERIGMATA 3-7  $\mu\text{m}$  long, straight, not divergent, also containing cyanophilic inclusions. CLAMP CONNECTIONS present. SPORES mummy-shaped, 11-13 x 4-5.5  $\mu\text{m}$ , (mean = 11.7 x 4.9), ornamented with conspicuous, cyanophilic striae, pale yellow spore print.



**Distinguishing Features:** Characterized by the striate spores, evanescence of the pink color, present only in primordial branch tips and the presence of clamp connections.

**Distribution:** Also known from eastern North America and eastern Oregon. Known from six sites within the range of the northern spotted owl: **CALIFORNIA**, Mendocino Co., Elder Creek Bottoms; **Siskiyou Co.**, Duck Lake; **OREGON**, Klamath Co., Deschutes National Forest, Odell Butte; **WASHINGTON**, King Co., Greenwater Rd. 10 miles east of Enumclaw; **Kittitas Co.**, Lake Kachess State Park; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Sloan Creek campground. There is also a report from the east slope of the Oregon Cascades with vague locality data.

**Substrate and habitat:** Fruits in humus or soil and matures above ground, associated with Pinaceae spp.

**Season:** Fruits in June, September and October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. Biblio. Mycol. 38:1-232.

**NOTES:**



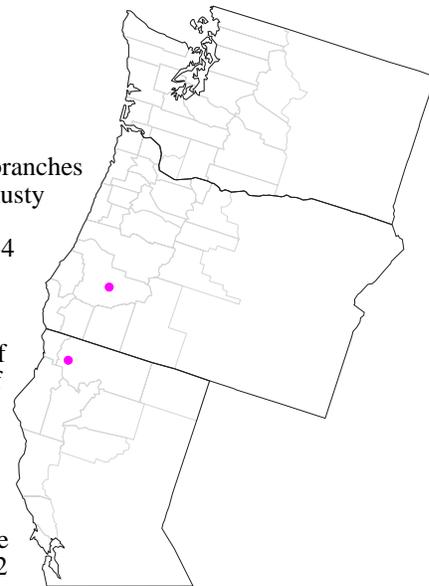
Photo courtesy of Dr. C. Marr

***Ramaria rubripermanens*** Marr & StuntzROD name *Ramaria rubripermanens*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS 9-13 x 9-16 cm, white to yellow-white, lower branches orange to red-white, apices pink-white to dull red. CONTEXT white. ODOR musty sweet. TASTE indistinct. STEM single, massive, 3-8 x 4 cm branch systems crowded, about 2-4 cm long, lower branches usually very short and broad, 2-4 cm diam, connation frequent in lower parts, upper branches mostly 1-4 mm diam, axils mostly acute to subacute, slightly divaricate, pluridigitate near subacute to rounded apices, consistency punky-firm when fresh. FLESH of stem slowly amyloid; PYR, ANW, GUA, PHN, and ANO negative. FLESH of interwoven hyphae in stem, parallel in branches, 4-15  $\mu\text{m}$  in diam, hyphae of the stipe 0.25-2.5  $\mu\text{m}$  in diam, hyphae of the branches mostly 0.25-1  $\mu\text{m}$  in diam, numerous cyanophilic globules conspicuous in the hyphae of the branches, ampulliform inflations near septa, 11-23  $\mu\text{m}$  in diam, walls of the swellings distinctly ornamented, especially those in the stipe. GLEOPLEROUS HYPHAE interweaving throughout context, 3.5-5  $\mu\text{m}$  in diam or in vesicular regions up to 20  $\mu\text{m}$  in diam. SUBHYMENIA of thin-walled, interwoven hyphae 2-4  $\mu\text{m}$  in diam, with cyanophilic globular inclusions. BASIDIA clavate, 31-62 x 7-11  $\mu\text{m}$ , cyanophilic, mostly (2-) 4-spored. STERIGMATA 3-6  $\mu\text{m}$  long, straight, not divergent. CLAMP CONNECTIONS present. SPORES subellipsoid to mummy-shaped, 8-13 x 3.5-4.5  $\mu\text{m}$ , (mean = 10.3 x 3.8), ornamented with oblique to longitudinal striae, striae distinctly more cyanophilic than wall.



**Distinguishing Features:** Characterized by its short, striate spores, red color of terminal branches and sporocarps that do not bruise red to violet brown.

**Distribution:** Endemic to the Pacific Northwest. Known from two sites within the range of the northern spotted owl: CALIFORNIA, Siskiyou Co., Klamath National Forest, Marble Mountain Wilderness Area, Haypress Meadows; OREGON, Douglas Co., Bureau of Land Management, Roseburg District, Red Ponds Research Natural Area. It is reported with vague locality data from the Olympic Peninsula in Washington and the Oregon Cascades.

**Substrate and habitat:** Fruits in humus or soil and matures above the ground, associated with Pinaceae spp.

**Season:** Fruits in June and October.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

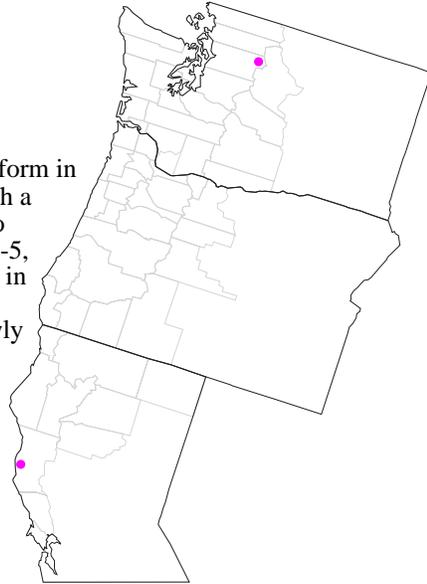
**NOTES:**

***Ramaria spinulosa* var. *diminutiva* Peterson**ROD name *Ramaria spinulosa* var. *diminutiva*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS up to 13 x 10 cm, usually much smaller, obpyriform in outline. STEM up to 5 x 2.3 cm, usually much narrower, gnarled, smooth, with a few abortive branchlets upward, sometimes mycelial at very base, deep tan to brown overall, often orange-brown below, staining brown. Major branches 3-5, more or less terete, up to 1.5 cm thick, concolorous with branches. Branches in 3-6 ranks, ascending, often rugulose longitudinally, brown to somewhat violaceous brown; internodes diminishing gradually at maturity; axils narrowly rounded; upper branches 1-1.5 mm thick, equal, erect, giving a delicate appearance, apices subcristate to irregularly digitate when young, extending to digitate by maturity, rounded, not inflated, violaceous brown when young, concolorous with branches at maturity. **ODOR** negligible or faintly of chocolate. **TASTE** faintly sour. **FLESH** of stem dull brown, streaked as though with wood grain; FCL positive; inamyloid, SYR, PHN, PYR, GUA, ANO, and ANW negative. **SPORES** broadly cylindrical to ovoid, 7.2-10.1 x 4.7-6.1  $\mu\text{m}$ , ornamentation of small streaks or ridges and small warts, thin-walled, hilar appendage blunt, papillate.



**Distinguishing Features:** Characterized by the brown base, lack of clamp connections and wide spores.

**Distribution:** Also known from Europe. Known from two sites within the range of the northern spotted owl: CALIFORNIA, Mendocino Co., Van Damme State Park; WASHINGTON, Snohomish Co., Mount Baker-Snoqualmie National Forest, Glacier Peak Wilderness, Sulphur Creek. Not known from Oregon.

**Substrate and habitat:** Fruits in humus or soil and matures above the ground, associated with Pinaceae spp.

**Season:** Fruits in October and November.

**References:** PETERSON, R.H. 1988. Contributions toward a monograph of *Ramaria* VII: New taxa and miscellany. Mycologia 80:223-234.

**NOTES:**

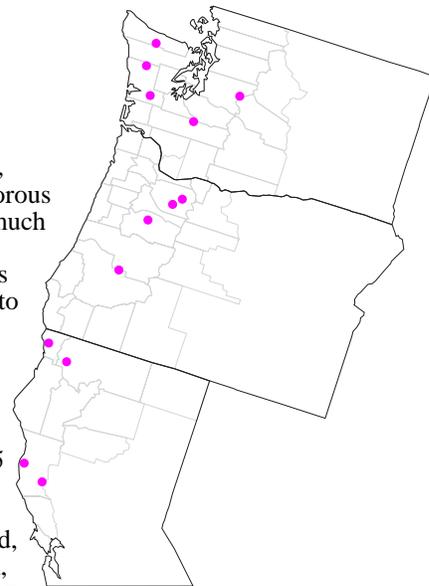
No Photograph Available

*Ramaria stuntzii* MarrROD name *Ramaria stuntzii*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** 6-17 x 4-14 cm, white to pale orange near base, branches scarlet in youth, fading to pale orange-red at maturity, flesh concolorous or paler near the center of branches. **STEM** single, massive, 2-7 x 2.5-7 cm, much branched, internodes elongated up to 5 cm, polychotomous to mostly dichotomous, axils frequently turbinate and nodes slightly flattened, branches slightly to moderately divergent, primary branches up to 4 cm in diam, bifid to multifid near rounded or nodulose apices, consistency punky fibrous. **ODOR** indistinct. **TASTE** slightly bitter. **FLESH** of stem strongly amyloid; phenol, aniline and guaiac, positive; guaiacol and pyrogallol sometimes reactive; 1-naphthol negative. **FLESH** subparallel to interwoven in stem, parallel in branches, 2-15  $\mu$ m in diam, a few hyphae highly inflated up to 22  $\mu$ m in diam, walls smooth, cyanophilic, thin ampulliform inflations near septa, 9-15  $\mu$ m in diam, wall of the swellings slightly ornamented in the branches, moderately ornamented in the stem. **GLEOPLEUROUS HYPHAE** 2-4  $\mu$ m in diam with localized bulbous regions up to 16  $\mu$ m in diam. **SUBHYMENIA** thin-walled, interwoven hyphae, 2-4  $\mu$ m in diam. **BASIDIA** clavate, 45-75 x 7-10 (-12)  $\mu$ m, (1 or) 4-spored. **STERIGMATA** 3-10  $\mu$ m long, straight, slightly divergent. **CLAMP CONNECTIONS** absent. **SPORES** subcylindrical, 7-10 x 3-5  $\mu$ m, (mean = 8.3 x 4), ornamented with small lobed warts, apricot yellow spore print.



**Distinguishing Features:** Characterized by the intense scarlet branches of young sporocarps, its robust habit and the strong amyloid reaction of the stem.

**Distribution:** Endemic to the Pacific Northwest. Known from eleven sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Jedediah Smith State Park; **Mendocino Co.**, Jackson State Forest; Co., Klamath National Forest, Marble Mountain Wilderness Area, Haypress Meadows; **OREGON**, **Clackamas Co.**, Mount Hood National Forest, near south fork of Eagle Creek; **Douglas Co.**, Bureau of Land Management (BLM), Eugene District, Upper Elk Meadows Research Natural Area; **Linn Co.**, BLM, Salem District, east of Crabtree on Rd. 226; **Marion Co.**, BLM, Salem District, Clear Down timber sale; **WASHINGTON**, **Clallam Co.**, Olympic National Park, Soleduc Falls; **Gray's Harbor Co.**, Lake Sylvia Sate Park; **King Co.**, Mount Baker-Snoqualmie National Forest, Goldmeyer Hot Springs trail; **Lewis Co.**, Pleasant Valley.

**Substrate and habitat:** Fruits in humus or soil and matures above the ground, associated with Pinaceae spp.

**Season:** Fruits in October and November.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**

Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. C. Marr

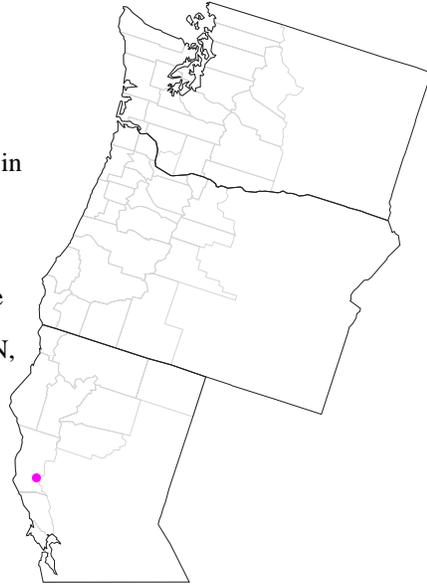


***Ramaria thiersii*** Peterson & ScatesROD name *Ramaria thiersii*

Family Ramariaceae

Morphological Habit coral

**Description:** **SPOROCARPS** up to 15 x 8 cm, obpyramidal to subcylindrical in outline, stem up to 7 x 6 cm, obpyramidal, white, smooth, weakly to strongly brunnescent where bruised, 3-5 branches, ascending to flaring, white to pale yellow, white when hypogeous, salmon-colored when epigeous, internodes diminishing upward gradually at maturity, axils rounded, often split below, apices digitate to molar-like when young, coarsely digitate by maturity, white where protected, pallid green-yellow where exposed. **ODOR AND TASTE** indistinct. **FLESH** white, not mottled, soft to spongy. **ANO, ANW, PYR, PHN, FCL** positive; **KOH** darkening on hymenium; inamyloid, **NOH**, negative. **FLESH** of stem of hyphae 3-12  $\mu\text{m}$  in diam, hyaline, tightly interwoven, wall up to 1  $\mu\text{m}$  thick, with extensive and coarse stalactitiform ornamentation, context of branches of upper branches 4-12  $\mu\text{m}$  in diam, hyaline, wall up to 1  $\mu\text{m}$  thick, more or less parallel, extensively but not exclusively adherent, ampulliform inflations rare, thin-walled, with extensive but delicate stalactitiform ornamentation. **GLOEOPLEROUS HYPHAE** of yellow-refringent hyphae 3-5  $\mu\text{m}$  in diam. **SUBHYMENIA** rudimentary. **BASIDIA** 45-50 x 7-8  $\mu\text{m}$ , clavate, 4-spored. **STERIGMATA** stout, straight, subcoronate. **CLAMP CONNECTIONS** present. **SPORES** cylindrical to narrowly ellipsoid, occasionally subsigmoid, 11.6-15.8 x 4-5  $\mu\text{m}$ , ornamentation of small, discrete low warts, thin-walled.



**Distinguishing Features:** Characterized by a context that reacts with most reagents, inamyloid stem flesh, and roughened spores that average over 13  $\mu\text{m}$  in length.

**Distribution:** Also known from Idaho. Known from a single site within the range of the northern spotted owl: **CALIFORNIA, Mendocino Co.**, Jackson State Forest. It also is known from one site in the Sierra Nevada Range in California, outside of the assessment area. Not known from Oregon or Washington.

**Substrate and habitat:** Fruits in humus or soil and matures above the ground, associated with Pinaceae spp.

**Season:** Fruits in June.

**References:** Peterson, R.H. 1988. Contributions toward a monograph of *Ramaria* VII: New taxa and miscellany. Mycologia 80:223-234.

**NOTES:**

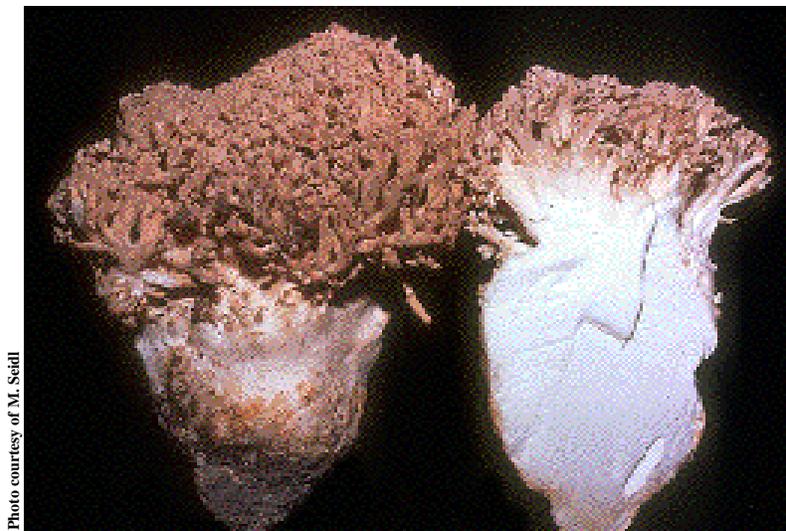


Photo courtesy of M. Seidl

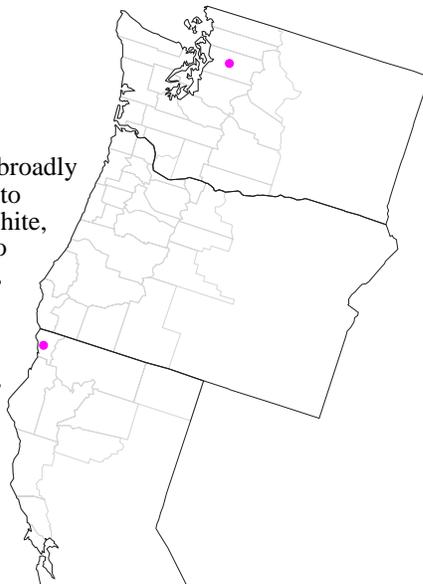
## *Ramaria verlotensis* Marr & Stuntz

ROD name *Ramaria verlotensis*

Family Ramariaceae

Morphological Habit coral

**Description:** SPOROCARPS up to 13 x 9 cm, apparently broadly obovate to broadly pyriform, stem single, small, branches almost from base, white below, mealy to densely but superficially pruinose at base, yellow above; consistency solid, white, firm-gelatinous to hard-rubbery, watery when fresh, branches pallid salmon to salmon, dichotomous, flattened, internodes diminishing gradually at maturity, axils often flattened, acute. **FLESH** of stem FCL positive; inamyloid, ANO, ANW, GUA, PHN, and PYR negative. **FLESH** of stem of hyphae 3-14  $\mu\text{m}$  in diam, hyaline, thin-walled, usually inflated, tightly interwoven, adherent to very locally free, agglutinating substance intercellular, ampulliform inflations abundant, wall up to 0.5  $\mu\text{m}$  thick, scallion-shaped, with extensive, coarse stalactitiform ornamentation. Tramal hyphae of upper branches hyaline, thin-walled, of cigar-shaped cells, 3-15  $\mu\text{m}$  in diam, adherent, parallel, ampulliform inflations occasional, up to 15  $\mu\text{m}$  broad, thin-walled, unornamented, also some hyphae 3-5  $\mu\text{m}$  in diam, straight, freely branched, not adherent, loosely arranged. **GLOEOPLEUROUS HYPHAE** common in stem, 3-8  $\mu\text{m}$  in diam, refringent, with abrupt inflations, uncommon in subhymenium, undelimited, often with tibiiform termination. **SUBHYMENIUM** extensive, of tightly interwoven hyphae. **BASIDIA** 70-80 x 8-10  $\mu\text{m}$ , clavate, inflated apically only at maturity; contents homogeneous to obscurely vacuolate, weakly cyanophilous, 4-spored; sterigmata straight, spindly. **CLAMP CONNECTIONS** absent. **SPORES** broadly ellipsoid to subovate, 9.0-11.2 x 4.7-6.1  $\mu\text{m}$ , (mean = 10.1 x 4.9), thin-walled, ornamentation of large warts or low, discrete plates covering extensive wall area.



**Distinguishing Features:** Characterized by a broad, cauliflowerlike, pale yellow-pink sporocarp, long basidia, warty spores, averaging 10.1 x 4.9  $\mu\text{m}$ , and gelatinized, thin-walled hyphae that lack clamp connections.

**Distribution:** Endemic to California and Washington. Known two sites within the range of the northern spotted owl: **CALIFORNIA**, Del Norte Co., Jedediah Smith State Park; **WASHINGTON**, Snohomish Co., Mount Baker-Snoqualmie National Forest, Verlot [old campground].

**Substrate and habitat:** Fruits in humus or soil and matures above the ground, associated with Pinaceae spp.

**Season:** Fruits in November.

**References:** MARR, C.D. AND STUNTZ D.E. 1973. *Ramaria* of Western Washington. *Biblio. Mycol.* 38:1-232.

**NOTES:**



Photo courtesy of Dr. C. Marr

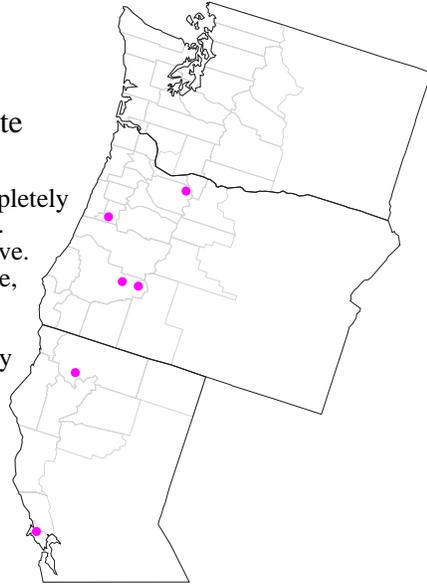
***Rhizopogon brunneiniger* A.H. Smith**ROD name *Rhizopogon brunneiniger*

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 1-2 cm diam, globose to subglobose and some ellipsoid, lacunose at times, dark red-brown to black-brown, blackening completely upon drying, with a group of basal rhizomorphs or a single basal rhizomorph. **GLEBA** loculate, white at first, becoming olivaceous, drying pale brown to olive. **COLUMELLA** absent (as seen on dried material). **TRAMA** of interwoven, hyaline, gelatinous, smooth, narrow hyphae. **SUBHYMENIUM** of thick-walled cells. **BASIDIA** 8-spored. **BASIDIOLES** hyaline, becoming thick-walled, amorphous content amyloid. **PERIDIUM** a single layer of hyaline, thin-walled, very closely interwoven hyphae, no green visible in mounts revived in KOH. **CLAMP CONNECTIONS** absent. **SPORES** cylindrical to narrowly oblong, 5-6.5 (-7) x 1.8-2.3(-2.5)  $\mu\text{m}$ , smooth, thin-walled, in KOH hyaline singly, yellow-brown in mass, inamyloid.

**Distinguishing Features:** Characterized by the basal attachment of rhizomorphs, and a glabrous, black, shiny peridium.



**Distribution:** Endemic to California and Oregon. Known from six sites within the range of the northern spotted owl: **CALIFORNIA, Marin Co.**, near Inverness; **Siskiyou Co.**, Klamath National Forest, Deadfall Meadows; **OREGON, Benton Co.**, 6.5 miles west of Philomath on Alsea hwy.; **Clackamas Co.**, Mount Hood National Forest, Barlow Forest camp; **Douglas Co.**, Umpqua National Forest, Limpy Rock Research Natural Area; Umpqua National Forest, 2 miles west of Basket Butte.

**Substrate and habitat:** Found in association with roots of assorted Pinaceae including *Abies concolor*, *Pinus contorta*, *P. monticola*, *P. muricata*, *Pseudotsuga menziesii*, *Tsuga heterophylla*, and *T. mertensiana*, from sea level to 7,000 ft. elevation.

**Season:** Fruits in September and October.

**References:** SMITH, A.H., AND S.M. ZELLER. 1966. A preliminary account of the North American species of *Rhizopogon*. Mem. New York Bot. Gard. 14:1-177.

**NOTES:**

No Photograph Available

***Rhizopogon chamaleontinus* A.H. Smith**ROD name *Rhizopogon* sp. nov. #Trappe 9432

Family Boletaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 1-2 cm diam, globose to irregular, when young with numerous appressed fibrils and rhizomorphs but nearly glabrous in age or as dried, white when young, staining fuscous to vinaceous fuscous, fuscous black when dried; FeSO<sub>4</sub> on surface quickly black, KOH olive then black. GLEBA loculate, pallid, becoming brown as dried. COLUMELLA absent. ODOR AND TASTE not recorded. PERIDIUM of elongate cells 5-12 µm in diam, some vinaceous red when mounted in KOH, at times hyphae of the outer trama also red. TRAMA of gelatinous, interwoven hyphae 4-7 µm in diam. SUBHYMENIUM of hyaline, subgelatinous hyphae, branching candelabra-like (not filamentose interwoven or cellular). BASIDIA 4-6-spored, 7-9 µm broad at apex, clavate, length variable. BASIDIOLES apparently not thick-walled. CLAMP CONNECTIONS absent. SPORES elongate, drop-shaped to subelliptic or at times somewhat irregular, 6-9 x 3-4.5 (-5) µm, wall slightly thickened, spores in outer locules amyloid, those in the interior inamyloid.

**Distinguishing Features:** Characterized by the white peridium that stains vinaceous to fuscous, an olive to black reaction of KOH on the peridium, lack of any yellow tones to the peridium and an unusual amyloid pattern of the spores, immature spores are dark violet, mature spores are inamyloid.

**Distribution:** Also known from Idaho. Known from a single site within the range of the northern spotted owl: OREGON, Josephine Co., Siskiyou National Forest, at saddle near Chinaman Hat.

**Substrate and habitat:** Found in association with the roots of *Pseudotsuga menziesii* and scattered *Pinus lambertiana* at 3,300 ft. elevation.

**Season:** Fruits in June and September.

**References:** SMITH, A.H., AND S.M. ZELLER. 1966. A preliminary account of the North American species of *Rhizopogon*. Mem. New York Bot. Gard. 14:1-177.

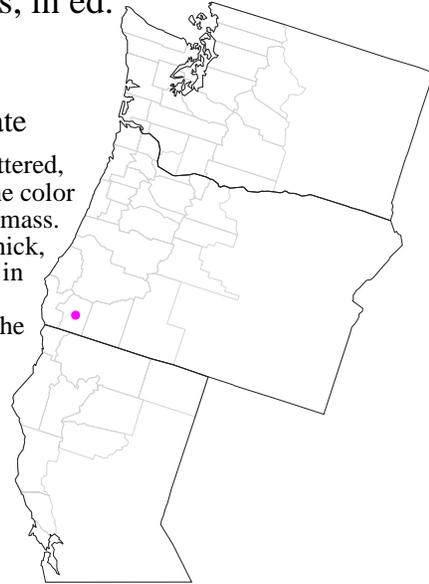
**NOTES:**



No Photograph Available

***Rhizopogon elliposporus*** Trappe, Cast. & Amaranthus, in ed.ROD name *Alpova* sp. nov. #Trappe 9730**Family** Boletaceae**Morphological Habit** sequestrate

**Description:** SPOROCARPS up to 15 x 24 mm, subglobose, brown with scattered, appressed, concolorous rhizomorphs. GLEBA loculate, pale yellow-brown, the color a combination of the white to brown trama and the pale brown-yellow spore mass. COLUMELLA absent. ODOR AND TASTE not recorded. PERIDIUM 120-160  $\mu\text{m}$  thick, of appressed-interwoven, hyaline to pale yellow, thin-walled hyphae 3-4  $\mu\text{m}$  in diam, many cells inflated to 4-6  $\mu\text{m}$  in diam, with abundant, extracellular deposits of amorphous yellow-brown pigment in KOH, in Melzer's reagent the pigment orange-brown. TRAMA with a central strand of loosely interwoven, hyaline hyphae 2-3  $\mu\text{m}$  in diam with gelatinous-thickened, glassy-appearing walls, the broad zones between the central strand and locule margins of similar but tightly interwoven hyphae that diverge to form a filamentous subhymenium. BASIDIA thin-walled, clavate, 12-24 x 4-10  $\mu\text{m}$ . BRACHYBASIDIOLES ellipsoid, hyaline 13-20 (-30) x 8-11 (-20)  $\mu\text{m}$  with walls gelatinous-thickened up to 5  $\mu\text{m}$ . CLAMP CONNECTIONS absent. SPORES ellipsoid to obovoid or occasionally irregular, (4-) 4.5-6 x 3-4  $\mu\text{m}$ , smooth, thin-walled, sterigmatal attachment  $\pm 1$   $\mu\text{m}$  broad, in KOH hyaline singly and brown-yellow in mass, inamyloid, slightly cyanophilic.

**Distinguishing Features:** Characterized within *Rhizopogon* by short broad spores.**Distribution:** Endemic to Oregon. Known from a single site within the range of the northern spotted owl: OREGON, Josephine Co., Siskiyou National Forest, on spur Rd. off Rd. 2800.**Substrate and habitat:** Found in association with the roots of *Pseudotsuga menziesii* and scattered *Pinus lambertiana* at 2,500 ft. elevation.**Season:** Fruits in October.**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199X. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).**NOTES:**

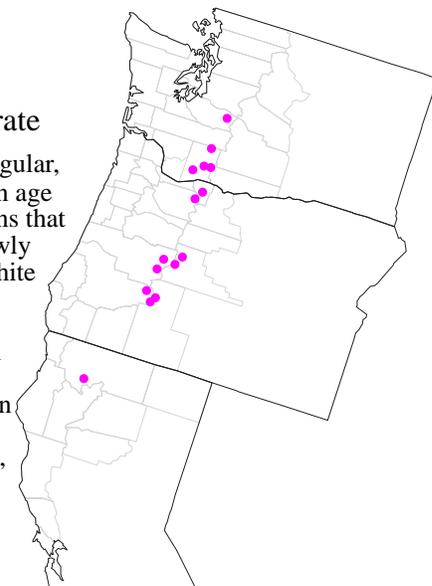
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***Rhizopogon evadens* var. *subalpinus*** A.H. SmithROD name *Rhizopogon evadens* var. *subalpinus*

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 10-30 mm in diam, globose, subglobose or irregular, white when fresh, fibrillose under a lens, staining ochraceous and then red, in age yellow-brown, with appressed rhizomorphs over the surface, in age specimens that have remained uninjured are merely dingy pallid; KOH dark red, ETOH slowly pink-brown and FeSO<sub>4</sub> distinctly olive. **ODOR** indistinct. **GLEBA** loculate, white becoming pale and then darker olivaceous. **COLUMELLA** absent. **PERIDIUM** somewhat separable, when cut at first pallid but soon red, of appressed-interwoven hyphae 4-12 μm in diam, many scattered inflated cells present in the lower portion, pink next to gleba on fresh sections mounted in KOH, when sections of dried material are revived in KOH the layer is evenly brown with numerous amorphous pigment deposits. **TRAMA** of hyaline, refractive, gelatinous hyphae. **SUBHYMENIUM** cellular. **BASIDIA** 6-8 spored, subcylindric, hyaline, thin-walled. **BASIDIOLES** 6-12 μm broad, subglobose to oval, thin-walled. **CYSTIDIA** absent. **CLAMP CONNECTIONS** absent. **SPORES** narrowly oblong, 6.5-7.5 x 2 μm, smooth, in KOH hyaline singly and in mass, inamyloid, thin-walled.



**Distinguishing Features:** Characterized by yellow-brown peridium that stains red when handled, the small narrow spores, and the inflated cells in the lower portion of the peridium.

**Distribution:** Also known from Idaho. Known from sixteen sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Deadfall Meadows; **OREGON**, Clackamas Co., Mount Hood National Forest, Still Creek campground; Deschutes Co., Deschutes National Forest, Soap Creek; Deschutes National Forest, Wickiup Plains; **Douglas** Co., Umpqua National Forest, Cascade Pass; Umpqua National Forest, Windigo Pass; **Hood River** Co., Mount Hood National Forest, Tillie Jane campground; **Klamath** Co., Winema National Forest, Miller Lake, Digit Point campground; **Lane** Co., Willamette National Forest, 0.5 miles north of Waldo Lake; Willamette National Forest, The Potholes; **WASHINGTON**, Pierce Co., Mount Baker-Snoqualmie National Forest, northeast slope of Sun Top Mountain; **Skamania** Co., Gifford Pinchot National Forest, Indian Prairie; Gifford Pinchot National Forest, Juniper Peak; Gifford Pinchot National Forest, Peterson Prairie; Gifford Pinchot National Forest, Trapper Creek Wilderness Area.

**Substrate and habitat:** Usually found in association with the roots of *Tsuga mertensiana* or *Abies* spp. from 3,800 ft. to 7,000 ft. elevation.

**Season:** Fruits from August through October.

**References:** SMITH, A.H., AND S.M. ZELLER. 1966. A preliminary account of the North American species of *Rhizopogon*. Mem. New York Bot. Gard. 14:1-177.

**NOTES:**

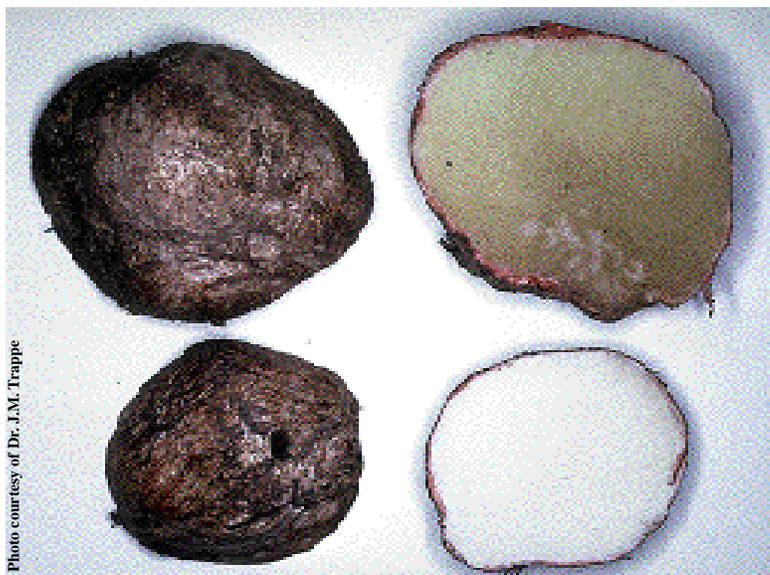


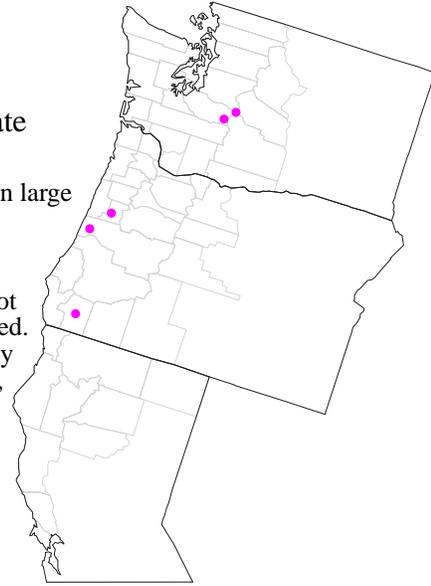
Photo courtesy of Dr. J.M. Trappe

***Rhizopogon exiguus* Zeller**ROD name *Rhizopogon exiguus*

Family Boletaceae

Morphological Habit sequestrate

**Description:** SPOROCARPS 2-10 mm broad, globose to subglobose, lobed in large specimens, white with ochraceous mottling, becoming brown, fibrils scanty above, rhizomorphic below. GLEBA loculate, white then brown. ODOR farinaceous. PERIDIUM of compactly interwoven hyphae in mass bright red-brown in KOH, at the exterior with yellow, loosely interwoven hyphae but not forming a distinct epicutis, hyphae thin-walled or walls very slightly thickened. TRAMA of hyaline, refractive, subparallel to interwoven hyphae, not obviously gelatinous. SUBHYMENIUM of branched filaments. BASIDIA 20-40 x 6-7.5 µm, narrowly clavate, walls may be thickened slightly as well as colored pale cinnamon in KOH. BASIDIOLES 14-20 x 7-10 µm, hyaline, thin-walled, nongelatinous. CYSTIDIA absent. CLAMP CONNECTIONS absent. SPORES oval to elliptic and base truncate from broad basal scar, 7-8 x 5-5.5 µm, yellow singly, red-brown in mass, inamyloid, wall smooth and slightly thickened.



**Distinguishing Features:** Characterized by a farinaceous odor, long basidia, the red-brown spores and the bright red-brown peridium in KOH.

**Distribution:** Endemic to Oregon and Washington. Known from five sites within the range of the northern spotted owl: OREGON, Benton Co., Siuslaw National Forest, Mary's Peak; Josephine Co., Siskiyou National Forest, Waters Creek; Lane Co., approximately 1 mile south of Mapleton; WASHINGTON, Pierce Co., Mount Baker-Snoqualmie National Forest, Silver Springs campground; Kittitas Co., Mount Baker-Snoqualmie National Forest, just east of Naches Pass.

**Substrate and habitat:** Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 2,800 ft. elevation.

**Season:** Fruits in March, August, September, and November.

**References:** ZELLER, S.M. 1939. New and noteworthy Gasteromycetes. Mycologia 31:1-32.

**NOTES:**



Photo courtesy of Dr. M.A. Castellano

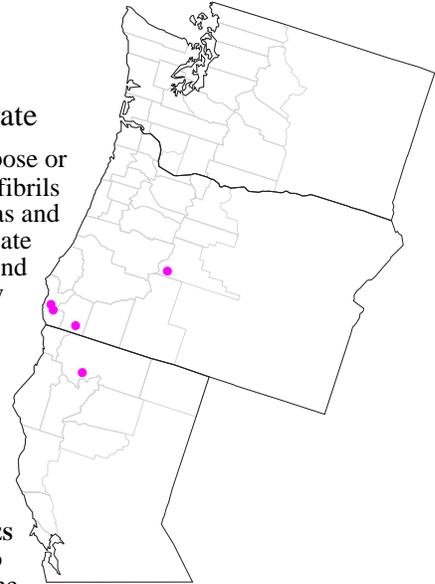
## *Rhizopogon flavofibrillosus* A.H. Smith

ROD name *Rhizopogon flavofibrillosus*

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** 3-5.5 2.2-5.5 cm, globose to depressed-subglobose or irregular, pallid when very young but soon overlaid with pale brown-yellow fibrils and rhizomorphs, at maturity variously colored, green-yellow over some areas and rose tinted over others but remaining pallid in the most protected places, virgate from appressed fibrils, attached by a basal cluster of rhizomorphs which extend up toward the surface; **KOH** on fresh peridium dull purple-red,  $\text{FeSO}_4$  slowly pale olivaceous, **ETOH** negative. **GLEBA** loculate, white becoming pale olivaceous. **COLUMELLA** absent. **PERIDIAL EPICUTIS** in the form of a trichodermium of short branched hyphae with end cells  $26-40 \times 5-9 \mu\text{m}$  and subcylindric to clavate, hyaline and thin-walled. **PERIDIAL SUBCUTIS** of appressed, parallel to interwoven hyphae, red in **KOH** from dissolved pigment, some encrusting pigment present on surface or near it; scattered groups of enlarged cells present. **TRAMA** of nongelatinous, refractive, hyaline, subparallel to interwoven hyphae  $2-4 \mu\text{m}$  in diam. **SUBHYMENIUM** reduced. **BASIDIA** 6-spored,  $16-20 \times 6-7 \mu\text{m}$ , hyaline, thin-walled. **BASIDIOLES** resembling basidia. **CLAMP CONNECTIONS** absent. **SPORES** narrowly elliptic to nearly oblong,  $5.5-6.5 (-7) \times 2.5-2.8 \mu\text{m}$ , smooth, thin-walled, in **KOH** hyaline, inamyloid.



**Distinguishing Features:** Characterized by the yellow peridium that stains dull purple-red in **KOH**.

**Distribution:** Also known from Idaho, Channel Islands National Park, California and Montana. Known from five sites within the range of the northern spotted owl: **CALIFORNIA**, Siskiyou Co., Klamath National Forest, Deadfall Meadows; **OREGON**, Curry Co., Siskiyou National Forest, LTEP study, Pistol River block, control plot; Siskiyou National Forest, LTEP study, Fairview Block, LSLW plot; **Deschutes** Co., Deschutes National Forest, Cultus Lake, along southeast side of USFS Rd. 4630; **Josephine** Co., Siskiyou National Forest, on Illinois Valley rd. across from Rd. 011. Not known from Washington.

**Substrate and habitat:** Found in association with the roots of various Pinaceae, including *Abies concolor*, *A. lasiocarpa*, *Picea engelmannii*, *Pinus attenuata*, *P. contorta*, *P. lambertiana*, *P. muricata*, or *Pseudotsuga menziesii* from 2,800 to 7,000 ft. elevation.

**Season:** Fruits from July through November.

**References:** SMITH, A.H., AND S.M. ZELLER. 1966. A preliminary account of the North American species of *Rhizopogon*. Mem. New York Bot. Gard. 14:1-177.

**NOTES:**



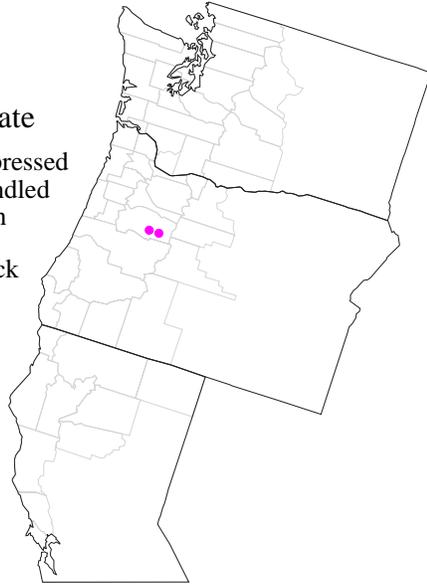
Photo courtesy of Dr. J.M. Trappe  
Photo courtesy of Dr. M.A. Castellano

***Rhizopogon inquinatus* A.H. Smith**ROD name *Rhizopogon inquinatus*

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** about 2 cm in diam, globose to subglobose, appressed fibrillose when fresh, white at first, on exposure to air pale tan and where handled slowly staining inky-fuscos but with an intervening red stage; KOH red then fuscous-black, FeSO<sub>4</sub> olivaceous but finally black. **ODOR** absent. **GLEBA** loculate to labyrinthiform, olive, when cut soon becoming olive-brown to black but when dried dark olivaceous. **COLUMELLA** absent. **PERIDIUM** of loosely interwoven, hyaline, thin-walled hyphae 3-5 µm in diam, as revived in KOH with dark red-brown granules of amorphous pigment, in Melzer's reagent, (both fresh and dried) with amyloid globules up to 30 µm or more in diam, no large inflated cells present. **TRAMA** of gelatinous, branched, interwoven hyphae 3-5 µm in diam. **SUBHYMENIUM** of gelatinous-filamentous branches extending to a weak cellular region below hymenium. **BASIDIA** 4-6- spored. **BASIDIOLES** hyaline, thin-walled, subgelatinous, 6-9 µm in diam. **CLAMP CONNECTIONS** absent. **SPORES** elliptic to oval and with a distinct cup-like truncation at base, 6.5-7.5 (-8) x 3-3.5 µm, smooth, thin-walled, in KOH dingy yellow singly, red-brown in mass, inamyloid.



**Distinguishing Features:** Characterized by the fuscous stains on the peridium and the large amyloid globules in the peridium.

**Distribution:** Also known from Idaho. Known from two sites within the range of the northern spotted owl: **OREGON**, Linn Co., Williamette National Forest, Longbow campground; Williamette National Forest, Tombstone Pass. Not known from California or Washington.

**Substrate and habitat:** Found in association with the roots of *Pinus jeffreyi*, *Pseudotsuga menziesii* and *Tsuga heterophylla* from 1,500 ft. to 4,200 ft. elevation.

**Season:** Fruits in September and October.

**References:** SMITH, A.H., AND S.M. ZELLER. 1966. A preliminary account of the North American species of *Rhizopogon*. Mem. New York Bot. Gard. 14:1-177.

**NOTES:**

No Photograph Available

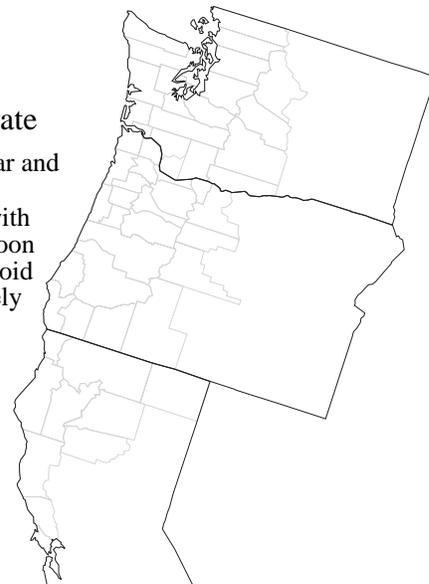
***Rhizopogon parksii*** A.H. Smith

ROD name *Rhizopogon* sp. nov. #Trappe 1692 & 1698

Family Boletaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** up to 10-40 mm in diam, subglobose to irregular and lobed, felty, in youth white, staining pink to violet where bruised, with age developing an covering of dark hyphae, at maturity dark gray to dark olive with brown to brown-black areas overlying sordid white. **GLEBA** white in youth, soon becoming gray to olive, at maturity dark olive-gray to dark olive. **ODOR** fungoid to pungent. **TASTE** not distinctive. **PERIDIUM** with an epicutis of brown, loosely interwoven hyphae with thin to somewhat thickened walls, flagellate hyphal ends often common, in water or Melzer's reagent with scattered to abundant black granules that dissolve in KOH to form a green fluid; subcutis a relatively thick layer of interwoven, hyaline, thin-walled hyphae, the layer pink to red in KOH and often with red to orange amorphous debris. **TRAMA** of interwoven hyphae with walls that become gelatinous-thickened at maturity. **SUBHYMENIUM** cellular. **BASIDIA** hyaline, 14-16 x 4-6  $\mu\text{m}$ . **CLAMP CONNECTIONS** lacking. **SPORES** ellipsoid to ovoid, 5-7 x 2.5-3  $\mu\text{m}$ , smooth, hyaline, thin-walled.



**Distinguishing Features:** Characterized characterized by its dark olive gleba, distinct reaction of the peridium to bruising, and its relatively short spores.

**Distribution:** Known from literally hundreds of locations in Northern California, western Oregon, and western Washington. It occurs from sea level to high elevation.

**Substrate and habitat:** Usually found in small or large groups in duff under *Pseudotsuga menziesii* forests.

**Season:** Fruits in August through December.

**References:** SMITH, A.H., AND S.M. ZELLER. 1966. A preliminary account of the North American species of *Rhizopogon*. Mem. New York Bot. Gard. 14:1-177.

**NOTES:**

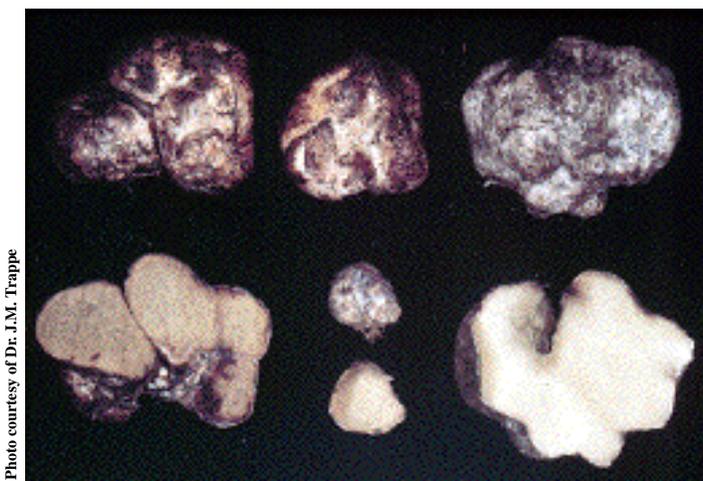


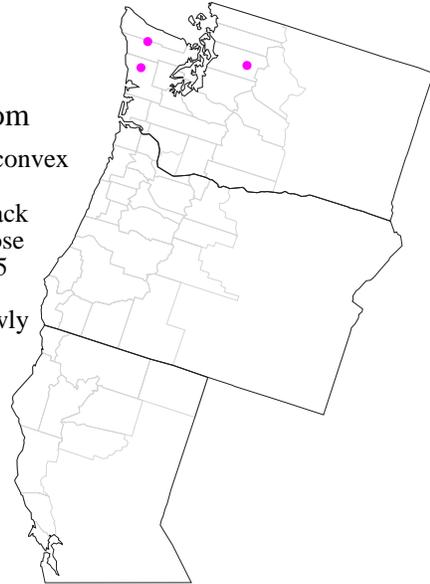
Photo courtesy of Dr. J.M. Trappe

***Rhodocybe nitida*** (Quélet) Baroni & Largent, in ed.ROD name *Entoloma nitidum*

Family Entolomataceae

Morphological Habit mushroom

**Description:** CAP 20-45 mm diam, conic, expanding with age to broadly convex with a conic umbo or broadly campanulate, surface smooth, shiny, radially appressed-fibrillose, not pellucid-striate, dark blue or blue-black to nearly black overall, fading only slightly in age. GILLS nearly free to narrowly adnate, close to crowded, broad, buff or dingy white at first, then pink. STEM 30-85 x 2.5-5 mm, cylindrical or slightly tapering downward, sometimes almost rooting, longitudinally fibrillose-striate, sometimes twisted, dry, shiny, solid or narrowly fistulose, dark blue to blue-black, base white or dingy yellow. ODOR slightly farinaceous or raphanoid. TASTE mild. PILEIPELLIS a thin ixocutis of repent, cylindrical hyphae 2.5-6 µm in diam, densely entangled and embedded in a thin, gelatinous matrix. HYPODERMIUM of inflated cells 25-60 x 20-25 µm. STIPITPELLIS of repent, parallel hyphae. BASIDIA 4-spored. CYSTIDIA absent. CLAMP CONNECTIONS present. SPORES subspherical, 6-8 angled in side view but angles rounded and almost nodulose, angled in end view, 6.5-9 x 6.5-7.5 µm, deep pink to pink-brown spore print.



**Distinguishing Features:** Characterized by a moderately large, broadly campanulate, shiny, nonstriate cap colored dark blue to almost black, a close, broad, pallid gills, a long and slender, dark blue, fibrillose-striate stem, subspherical, angled-nodulose, pink spores, lack of cystidia, and a thin pileipellis of densely entangled, subgelatinized hyphae. *Rhodocybe trachyspora* var. *purpureoviolacea* differs in forming a cap that is distinctly translucent-striate when moist and colored purple-gray or dark brown-gray with purple tints and typically fades to shades of brown, lacks a farinaceous or raphanoid odor, and has a pileipellis of loosely interwoven, gelatinized hyphae. *Leptonia carnea* is macromorphologically nearly indistinguishable from *R. nitida* but differs in forming much larger and less nodulose spores (8.8-13.3 x 6-10.4 µm), and a stipitipellis with clusters of loosely entangled to interwoven hyphae. Personal communications with Drs. David Largent and Tim Baroni revealed that this taxon belongs in *Rhodocybe* and they intend to make the formal transfer in the near future.

**Distribution:** Endemic to Washington. Known from three sites within the range of the northern spotted owl: WASHINGTON, Grays Harbor Co., Olympic National Forest, Quinault Research Natural Area; Jefferson Co., Olympic National Park, Hoh River; Snohomish Co., Mount Baker-Snoqualmie National Forest, Barlow Pass.

**Substrate and habitat:** Usually found as single sporocarps or in small groups in duff under conifer or mixed conifer-hardwood forests.

**Season:** Fruits in July through November.

**References:** QUÉLET, L. 1883. Quelques espèces critiques ou nouvelles de la flore mycologique de France. Assoc. Franç. Avan. Sci. (La Rochelle, 1882). 1:387-412. QUÉLET, L. 1886. Enchridion fungorum in europa media et praesertim in Gallia vigentium. Lutetiae, 264 pp.

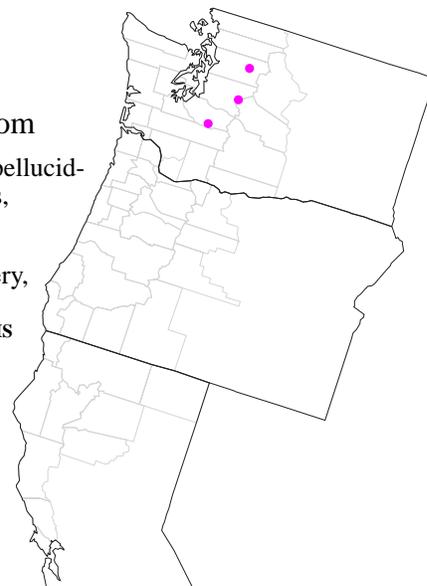
**NOTES:**

Photo courtesy of Dr. T. Baroni  
Photo courtesy of Dr. T. Baroni



***Rhodocybe speciosa*** Lennox ex BaroniROD name *Rhodocybe speciosa***Family** Entolomataceae**Morphological Habit** mushroom

**Description:** CAP 15-40 mm in diam, convex to nearly plane in age, not pellucid-striate, surface dry, glabrous or appearing somewhat powdery, hygrophanous, uniformly tan or honey brown, fading with moisture loss to pale tan. **GILLS** sinuate, horizontal, crowded, broad, white but becoming pink to pale pink-orange. **STEM** 30-45 x 3-8 mm, cylindrical, apex prunose, central portion silvery, fibrillose-streaked, base with matted white mycelium, pale yellow to pale orange above, base slightly darker. **ODOR AND TASTE** farinaceous. **PILEIPELLIS** of repent, cylindrical hyphae 3-14  $\mu\text{m}$  in diam, with procumbent versiform pilocystidia 18-65 x 8-14  $\mu\text{m}$ , cells hyaline, nonencrusted, nongelatinous. **STIPIPELLIS** of repent, parallel hyphae giving rise to clusters of erect, versiform caulocystidia 40-70 x 6.5-24  $\mu\text{m}$ . **BASIDIA** 4-spored. **CLAMP CONNECTIONS** present. **SPORES** subglobose to obovoid, slightly angular and wrinkled in side view, angular in end view, 5.5-7 x 5-5.5  $\mu\text{m}$ , pink to pink-brown spore print.



**Distinguishing Features:** Characterized by a tan colored, dry, nonstriate, convex cap, the pink, sinuate gills, a yellow-orange, fibrillose-streaked stem, the slightly wrinkled and angular pink spores, a lack of hymenial cystidia, the presence of procumbent pilocystidia, clamp connections, and habit on conifer wood. *Rhodocybe speciosa* may be confused in the field with several other pink-spored taxa, such as *Leptonia formosa* (Fr.: Fr.) Gillet, *Nolanea fructifragrans* Largent & Thiers, and *Nolanea cetrata* (Fr.) Kummer. All of the latter taxa differ from *R. speciosa*, however, in forming distinctly pellucid-striate caps when fresh and moist, in lacking clamp connections, and in having nonwrinkled, more strongly angular spores that are much larger [in the range 8-11 x 6-8.5 (-10)  $\mu\text{m}$ ].

**Distribution:** Endemic to Washington. Known from three sites within the range of the northern spotted owl: **WASHINGTON, King Co.**, Mount Baker-Snoqualmie National Forest, Denny Creek campground; **Pierce Co.**, Mount Rainier National Park, Tahoma Creek; **Snohomish Co.**, Mount Baker-Snoqualmie National Forest, Barlow Pass.

**Substrate and habitat:** Usually found in gregarious, caespitose clusters on rotten conifer wood at high elevation.

**Season:** Fruits in October and November.

**References:** BARONI, T. J. 1981. A revision of the genus *Rhodocybe* Maire (Agaricales). Beih. Nova Hedwigia 67:1-194.

**NOTES:**



Photo courtesy of Dr. T. Baroni

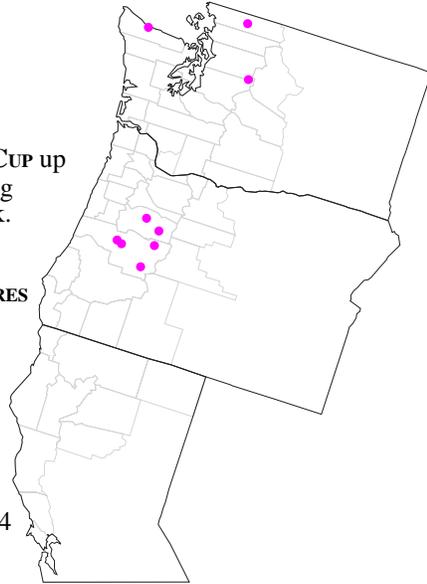
*Sarcosoma latahense* Paden & TylutkiROD name *Plectania latahensis*

Family Sarcosomataceae

Morphological Habit cup

**Description:** SPOROCARPS turbinate to discoid, substipitate, apotheciate. CUP up to 75 mm broad, several mm thick when young but relatively plane, becoming discoid with age and thinner. HYMENIUM at first deep purple, becoming black. ABHYMENIAL SURFACE gray to black, clothed with an extensive tomentum of subhyaline to olivehyphae. PARAPHYSES with irregular apices, sometimes curved, slender, much branched. ASCI operculate, inamyloid, 8-spored. SPORES elliptical, 24-38 x 9-12 µm, smooth.

**Distinguishing Features:** Characterized by a substipitate, black cup with a tomentose abhymenial surface and lacking a well-gelatinized medullary excipulum. *Sarcosoma mexicana* (Ellis & Holway) Paden & Tylutki is the common *Sarcosoma* in the Cascade Mountains and Coast Ranges from California to Washington. It has a well-developed and persistent gelatinous medullary excipulum, spores that measure 23-34 x 10-14 µm, heavily pigmented hairs on the abhymenial surface of the apothecia and occurs from November into April.



**Distribution:** Also known from Idaho. Known from ten sites within the range of the northern spotted owl: OREGON, Lane Co., Willamette National Forest, Hemlock Butte; Willamette National Forest, Lowder Mountain trail; Bureau of Land Management (BLM), Eugene District, near Gosage Creek; BLM, Eugene District, 1 mile north of Bear Mountain; BLM, Eugene District, east of Round Mountain; Linn Co., Willamette National Forest, Iron Mountain, 1/4 mile up trail; BLM, Salem District, near Trout Creek; WASHINGTON, Clallam Co., Olympic National Park, Barnes Point; King Co., Mount Baker-Snoqualmie National Forest, Deception Falls; Whatcom Co., Mount Baker-Snoqualmie National Forest, intersection of road to Baker Lake and Rd. 3707. Another site with vague locality data was found at Oregon, Benton Co., Mary's Peak. Not known from California.

**Substrate and habitat:** Solitary to gregarious on or near decaying wood, or on litter and soil. Often fruiting near melting snowbanks in montane regions, also in low elevation conifer forests.

**Season:** Fruits from April through May.

**References:** PADEN, J.W., AND E.E. TYLUTKI. 1969. Idaho Discomycetes. II. Mycologia 61:683-693.

**NOTES:**

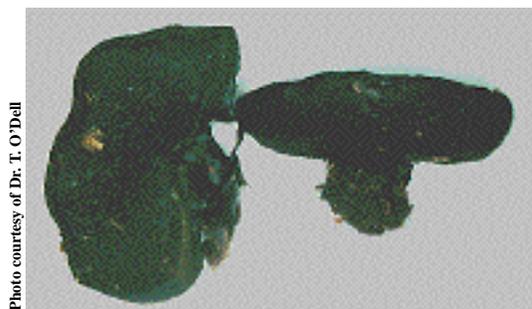


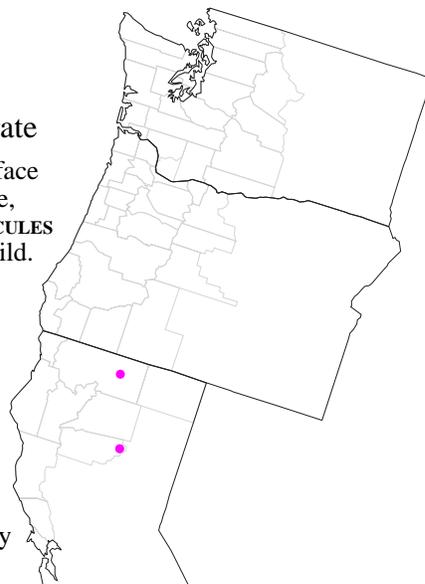
Photo courtesy of Dr. T. O'Dell

*Sedecula pulvinata* ZellerROD name *Sedecula pulvinata*

Family Sedeculaceae

Morphological Habit sequestrate

**Description:** **SPOROCARPS** pulvinate, up to 6 cm wide, up to 4 cm tall, surface smooth to granular with adherent soil, white to gray. **GLEBA** coarsely loculate, black except for the white to gray trama becoming powdery at maturity. **LOCULES** labyrinthine, 1-12 x 1-3 mm, lined with powdery spores. **ODOR AND TASTE** mild. **PERIDIUM** tough, leathery, 2-3 mm thick above, thin and almost evanescent below, margin of thicker peridium usually somewhat rolled under so as sometimes to elevate the basal or under side, composed of large cells with strongly gelatinized walls. **TRAMA** 1-2 mm thick, extends centripetally to unequal depths toward the base. **BASIDIA** narrow-clavate, 2-spored. **STERIGMATA** about as long as the spores, slender. **SPORES** ovoid to somewhat ellipsoid or irregular, usually very short-pedicelate, 23-26 x 13-16.2  $\mu\text{m}$ , in KOH dark brown, inamyloid.



**Distinguishing Features:** Characterized by the unique spores, powdery gleba at maturity, and pulvinate sporocarp.

**Distribution:** Also known from Lassen Volcanic National Park, Lassen National Forest and Sierra National Forest in California, and from Colorado and Idaho. Known from a single site within the range of the northern spotted owl: CALIFORNIA, Siskiyou Co., Mount Shasta.

**Substrate and habitat:** found in association with the roots of *Abies concolor*, *A. lasiocarpa*, *A. magnifica*, *Picea engelmannii*, and *Pinus contorta* above 6,000 ft. elevation.

**Season:** Fruits from June through September.

**References:** ZELLER, S.M. 1941. Further notes on fungi. Mycologia 33:196-214.

**NOTES:**



Photo courtesy of Dr. M.A. Castellano

*Sowerbyella rhenana* (Fuckel) J. Moravec

ROD name *Aleuria rhenana*

Family Otidaceae

**Morphological Habit cup**

**Description:** **SPOROCARPS** stipitate, apotheciate. Cup compressed to regular, up to 10-25 mm in diam, shallowly broadly cupulate to nearly plane in age. **HYMENIUM** bright orange to yellow-orange, even. **ABHYMENIAL SURFACE** pale orange to white, typically with hyaline, appressed, inconspicuous hairs. **MARGIN** incurved becoming straight to flaring in age, sometimes cracking in age, lacking prominent hairs. **STEM** tapered, up to 5-20 mm long, up to 2-5 mm thick, concolorous with abhymenial surface, also invested with hairs, often several stems together. **PARAPHYSES** curved or straight, containing orange granules, fleetingly green when mounted in Melzer's reagent. **ASCI** operculate, 8-spored, thin-walled. **SPORES** ellipsoid, 18-23.6 (-26.3) x 9-11.8 µm without ornamentation, ornamented with a reticulum, the meshes 1.5-4 µm broad, mostly 6-sided, ridges to 1.5 µm tall, apiculus absent.

**Distinguishing Features:** Characterized by a stipitate cup with an orange to yellow-orange hymenium and pale orange to white underside and stem, and guttulate, reticulate spores that lack an apiculus. Although often confused with *Aleuria* spp., the combination of a stem and nonapiculate spores make it quite distinctive. Other *Sowerbyella* species share the yellow or yellow-orange or orange stipitate, cup sporocarp; however, they have smaller spores and have less reticulation on the spores.

**Distribution:** Also known from Europe and Japan. Known from twelve sites within the range of the northern spotted owl: **CALIFORNIA**, **Del Norte** Co., Six Rivers National Forest, Big Flat campground; **Humboldt** Co., Redwood National Park, Lady Bird Johnson Grove; **Mendocino** Co., Jackson State Forest, 0.5 miles from Little Lake Rd., alongside Rd. 409; Van Damme State Park; **Sonoma** Co., Salt Point State Park; **OREGON**, **Clackamas** Co., near Rhododendron; Mount Hood National Forest, near south fork of Eagle Creek; Bureau of Land Management (BLM), Salem District, 5 miles south of Estacada; **Linn** Co., BLM, Salem District, east of Crabtree on Rd. 226; Willamette National Forest, Moose Ridge; **WASHINGTON**, **Clallam** Co., near Forks, Bear Creek campground; **Lewis** Co., Gifford Pinchot National Forest, near Cispus Environmental Learning Center.

**Substrate and habitat:** Fruits in scattered to gregarious or caespitose groups in duff of moist, relatively undisturbed, older conifer forests. One collection was noted to occur under *Lithocarpus* sp.

**Season:** Fruits October through December.

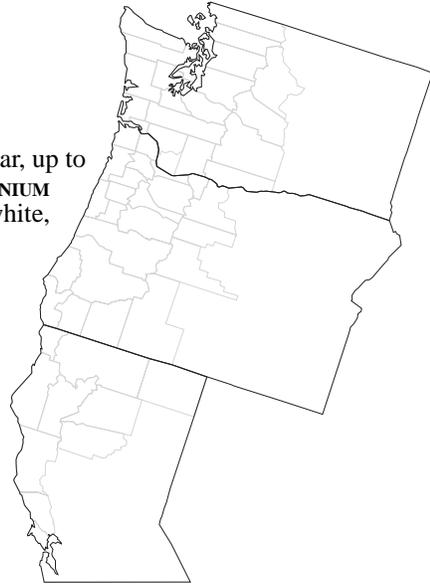
**References:** MORAVEC, J. 1986. A new species and two new combinations in the genus *Sowerbyella*. Mycol. Helv. 2:93-102. MORAVEC, J. 1988. A key to the species of *Sowerbyella* (Discomycetes, Pezizales). Česká Mykol. 42:193-199.

**NOTES:**



Photo courtesy of Dr. T. O'Dell  
Photo courtesy of Dr. J.A. Weber

Photo available only in print version



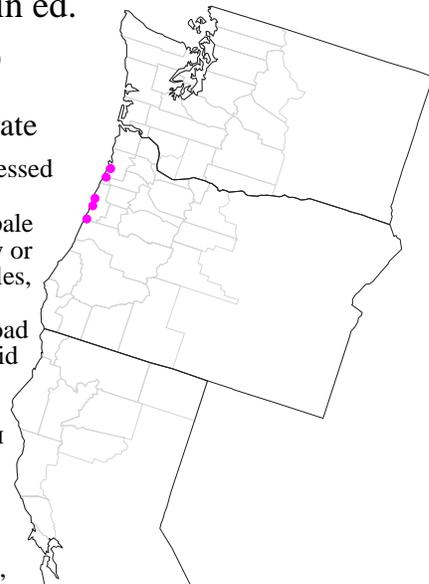
***Thaxterogaster pavelekii*** Trappe, Cast. & Rawlinson, in ed.

ROD name *Thaxterogaster* sp. nov. #Trappe 4867, 6242, 7427, 7962, 8520

**Family** Cortinariaceae

**Morphological Habit** sequestrate

**Description:** CAP 7-40 x 12-35 mm, convex to turbinate, the margin appressed against protruding base or seceded up to a mm to expose underlying locules, surface thickly slimy-viscid when wet, shiny when dry, pale yellow-gray to pale brown-gray on disc, towards the margin concolorous or grading to olive-gray or brown-gray, often radially streaked. **GLEBA** with radiate-labyrinthiform locules, dark red-brown to dark brown, with a percurrent stem-columella that often protrudes beyond the sporocarp base. **COLUMELLA** columnar and 1-2 mm broad or often greatly enlarged near the base, white to gray, in wet weather subviscid or with a viscid zone where the cap margin is appressed, the flesh white throughout or in age becoming brown-yellow below. **ODOR** faint or sometimes musty-raphanoid to sweet-medicinal. **TASTE** indistinct. **PERIDIUM** a tangled ixotrichodermium of thin-walled, hyaline hyphae 3-4  $\mu\text{m}$  in diam, these becoming appressed to the surface on dried material. **FLESH** of loosely interwoven, thin-walled, hyaline hyphae 3-10  $\mu\text{m}$  in diam, the cells mostly inflated to 5-20 (-30)  $\mu\text{m}$  in diam, many isodiametric. **TRAMA** of subparallel, thin-walled, hyaline hyphae 3-6  $\mu\text{m}$  in diam, some cells inflated up to 15  $\mu\text{m}$ , infrequent brown-golden laticiferous hyphae present. **SUBHYMENIUM** of more or less isodiametric cells 5-15 (-20)  $\mu\text{m}$  in diam. **BASIDIA** hyaline to brown-golden, 30-40 x 9-11  $\mu\text{m}$ , 2-4-spored. **STERIGMATA**  $\pm 5 \times 1.5 \mu\text{m}$ . **CLAMP CONNECTIONS** absent. **SPORES** ellipsoid, 14-18 (-21) x (8-) 9-10 (-11)  $\mu\text{m}$  excluding the ornamentation of narrow lines and warts 0.1-0.5 (-1)  $\mu\text{m}$  tall and broad, sometimes nearly partially reticulate, length:width ratio 1.5-2, asymmetric appendage  $\pm 1 \times 1.5 \mu\text{m}$ , spore wall  $\pm 1.5 \mu\text{m}$  thick, in KOH brown, inamyloid.



**Distinguishing Features:** Characterized by the pale yellow-gray to pale brown-gray sporocarp and narrow, warty, brown spores.

**Distribution:** Endemic to Oregon. Known from seven sites within the range of the northern spotted owl: **OREGON, Lincoln Co.**, Siuslaw National Forest, Cape Perpetua, at top of auto tour; near Yachats; near Otter Rock; near Agate Beach; **Tillamook Co.**, Cape Lookout State Park, south of parking area; near junction of Tierra del Mar Rd. and Haystack Rock Rd.; 1.5 miles north of Pacific City on Three Capes Loop.

**Substrate and habitat:** Found in association with the roots of *Picea sitchensis* and *Pinus contorta* below 800 ft. elevation.

**Season:** Fruits from March through June, also November.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199x. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**

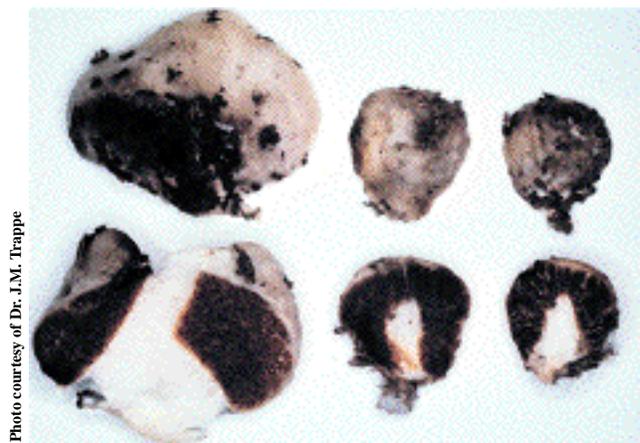


Photo courtesy of Dr. J.M. Trappe

***Tricholoma venenatum*** AtkinsonROD name *Tricholoma venenatum*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 25-130 mm in diam, convex-umbonate, dry, densely matted-fibrillose over the center with scattered pale tan squamules elsewhere, off-white to pale tan. FLESH white or watery gray. GILLS sinuate attached, white to ivory buff. STIPE 30-100 x 7-25 mm, equal to slightly clavate or bulbous, silky-fibrillose, overall pale buff. ODOR AND TASTE indistinct or farinaceous. PILEIPELLIS a layer of hyaline to pale brown hyphae 2.5-9.5  $\mu\text{m}$  in diam. BASIDIA 40-48 x 7-10  $\mu\text{m}$ , clavate, hyaline. CHEILOCYSTIDIA absent to rare. CLAMP CONNECTIONS present. SPORES ellipsoid, 7.2-10.7 x 4.8-7.2, smooth, thin-walled, hyaline, inamyloid, white spore print.

**Distinguishing Features:** Characterized by its white spore print, dry, squamulose, pale tan cap and white gills. *Tricholoma pardinum* and *T. huronense* also have squamulose caps. However, *T. pardinum* has a gray to gray-brown cap, has larger spores (8.6-9.5 x 5.7-6.7  $\mu\text{m}$ ), and has large sphaero-pedunculate, thin-walled, hymenial cystidia. *Tricholoma huronense* has a smoky gray cap often streaked pink on the margin, hymenial cystidia, and grows in association with hardwoods. *Tricholoma serratifolium* also is occasionally mistaken for *T. venenatum* due to its overall pale coloration, frequent brown tinges on the cap and occasional squamules on the cap. However it lacks clamp connections, has a bitter taste, broader spores, cheilocystidia, and in general a smoother cap surface.

**Distribution:** Also known from Michigan. Known from a single site within the range of the northern spotted owl: WASHINGTON, Clallam Co., Olympic National Park, Olympic Hot Springs trail.

**Substrate and habitat:** Found associated with roots of Pinaceae.

**Season:** Fruits in November.

**References:** SHANKS, K.M. 1997. The Agaricales (Gilled Fungi) of California 11. Tricholomataceae II. Mad River Press, Eureka, CA. 54 pp.

**NOTES:**

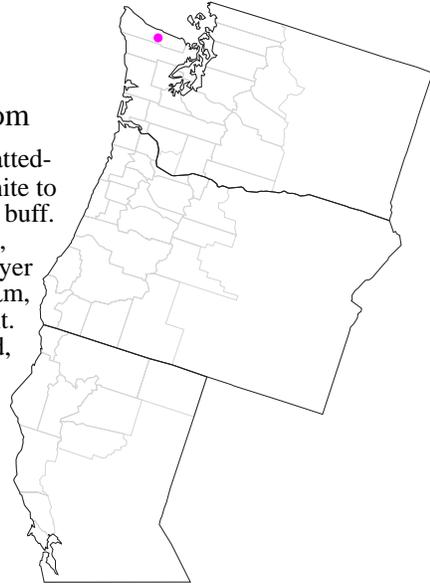


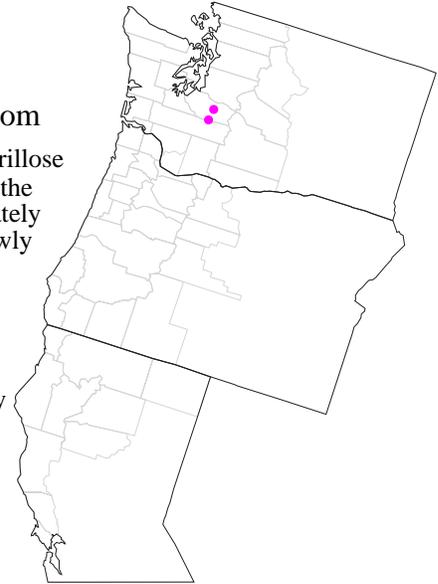
Photo courtesy of Dr. T. O'Dell

*Tricholomopsis fulvescens* A.H. SmithROD name *Tricholomopsis fulvescens*

Family Tricholomataceae

Morphological Habit mushroom

**Description:** CAP 30-50 mm in diam, broadly convex, dry, appressed-fibrillose with the fibrils in fascicles near the margin, orange-yellow to yellow-tan on the disc with tawny fibrils, margin cream tan. GILLS adnate, horizontal, moderately close, broad, pale yellow, drying red-brown. STEM 60-90 x 8-10 mm, narrowly clavate, hollow, dry, appressed-fibrillose, yellow-brown, darkening to rusty brown where handled. ODOR AND TASTE indistinct. PILEIPELLIS a layer or lattice of tangled, yellow, thick-walled hyphae 3-8  $\mu\text{m}$  in diam. BASIDIA 4-spored. CHEILOCYSTIDIA abundant, 28-40 x 6-9  $\mu\text{m}$ , clavate to fusoid-ventricose, hyaline. PLEUROCYSTIDIA abundant, 50-80 x 6-9  $\mu\text{m}$ , subcylindric to subfusoid, arising from the gill trama and not projecting very much above the hymenium. CLAMP CONNECTIONS present. SPORES broadly ellipsoid, 8-10 x 6-7  $\mu\text{m}$ , smooth, inamyloid, white spore print.



**Distinguishing Features:** Characterized by yellow-orange cap with tawny fibrils, yellow lamellae, white spore print, a yellow-brown stem that darkens to rusty brown where handled, relatively large, broadly ellipsoid spores, relatively small, clavate cheilocystidia, abundant pleurocystidia, and thick-walled, yellow pileipellis cells.

**Distribution:** Endemic to the Pacific Northwest. Known from two sites within the range of the northern spotted owl; WASHINGTON, Pierce Co., Mount Rainier National Park, lower Tahoma Creek; Mount Rainier National Park, Green Lake. Another collection without specific locality information is noted from along the Salmon River, Mount Hood National Forest, Clackamas Co., Oregon. Not known from California.

**Substrate and habitat:** Found solitary on decayed conifer wood above 3,000 ft. elevation.

**Season:** Fruits in September and October.

**References:** SMITH, A.H. 1960. *Tricholomopsis* (Agaricales) in the western hemisphere. Brittonia 12:41-70.

**NOTES:**



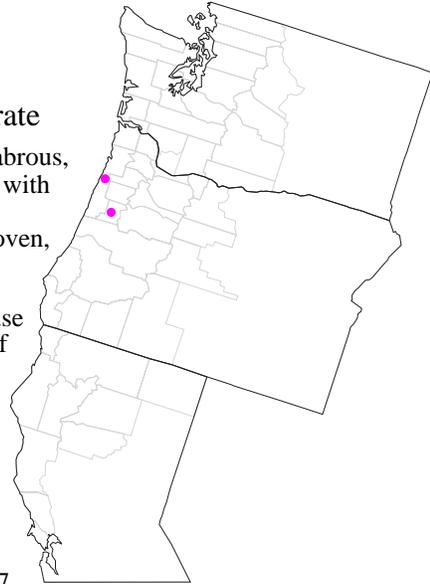
Photo courtesy of Dr. J. Ammirati

***Tuber asa*** Tulasne & TulasneROD name *Tuber sp. nov.* #Trappe 2302

Family Tuberales

Morphological Habit sequestrate

**Description:** **SPOROCARPS** subglobose, convoluted, 10-15 mm in diam, glabrous, dark olive with white furrows and patches. **GLEBA** dark gray-brown marbled with narrow, off-white veins. **ODOR AND TASTE** indistinct. **PERIDIUM** olive, hygrophorous in cross section. **PERIDIAL EPICUTIS** 30-50  $\mu\text{m}$  thick, of interwoven, pale yellow to yellow-brown hyphae 4-10  $\mu\text{m}$  in diam, walls up to 1  $\mu\text{m}$  in diam, many cells inflated up to 30 (-40)  $\mu\text{m}$  in diam, appears pseudoparenchymatous in places, other places with abundant, emergent, obtuse to tapered, bulbous, cystidioid or versiform hyphal tips. **PERIDIAL SUBCUTIS** of tightly interwoven, hyaline, thin-walled hyphae 2-5  $\mu\text{m}$  in diam, occasional cells inflated up to 10  $\mu\text{m}$  in diam. **TRAMA** of tightly interwoven, hyaline, thin-walled hyphae 3-8  $\mu\text{m}$  in diam, the cells not or only slightly inflated. **PARAPHYSES** absent. **ASCI** ellipsoid to subglobose, 70-85 x 50-70  $\mu\text{m}$ , thin-walled, hyaline, sessile or with a short stem up to 15 x 8  $\mu\text{m}$ , inamyloid. **SPORES** globose to subglobose, 1-4 per ascus, in 1-spored asci 36-45 x 35-40  $\mu\text{m}$  in diam excluding ornamentation, in 2-spored asci 25-35 x 25-34  $\mu\text{m}$ , in 3-spored asci 20-31 x 19-29  $\mu\text{m}$ , in 4-spored asci 20-28 x 19-26  $\mu\text{m}$ , brown, ornamentation an alveolate reticulum (2-) 3 (-4)  $\mu\text{m}$  tall, the alveolae with 4-7 sides and (4-) 5-7 (-9) across the spore, spore walls 2-3  $\mu\text{m}$  thick.



**Distinguishing Features:** Characterized by the convoluted sporocarp which is dark olive with white furrows and the subglobose spores ornamented with a tall reticulum.

**Distribution:** Also known from France and Nebraska. Known from two sites within the range of the northern spotted owl: **OREGON, Benton**, Siuslaw National Forest, Woods Creek Rd. at watershed gate; **Tillamook Co.**, Cascade Head Experimental Forest, at summit along old highway 101.

**Substrate and habitat:** Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 500-1,500 ft. elevation in Oregon; *Pinus ponderosa* in Nebraska.

**Season:** Fruits in July and October.

**References:** TULASNE, L.-R., AND TULASNE, C. 1851. Fungi hypogaei. Histoire et monographie des champignons hypogés. Friedrich Klincksieck, Paris. 222 pp.

**NOTES:**

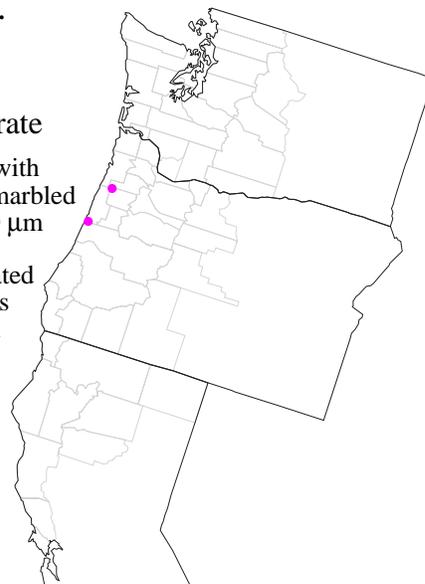
No Photograph Available

***Tuber pacificum*** Trappe, Castellano & Bushnell, in ed.ROD name *Tuber sp. nov.* #Trappe 12493

Family Tuberales

Morphological Habit sequestrate

**Description:** **SPOROCARPS** subglobose, convoluted, 6-9 x 4-9 mm, white with pale brown areas, shallowly furrowed, felty. **GLEBA** brown to black-brown marbled with narrow, white veins. **ODOR AND TASTE** not recorded. **PERIDIUM** 250-400  $\mu\text{m}$  thick. **PERIDIAL EPICUTIS** 20-30  $\mu\text{m}$  thick, of appressed to tangled, hyaline to pale yellow hyphae 2-5  $\mu\text{m}$  in diam, walls up to 1  $\mu\text{m}$  thick, many cells inflated to 8-10  $\mu\text{m}$  in diam, appearing pseudoparenchymatous in places, other places with abundant, emergent, obtuse to tapered, bulbous, cystidioid or versiform hyphal tips. **PERIDIAL SUBCUTIS** of tightly interwoven, hyaline, thin-walled hyphae 1.5-3  $\mu\text{m}$  in diam. **TRAMA** of tightly interwoven, hyaline hyphae 2-5  $\mu\text{m}$  in diam, occasional cells inflated up to 10  $\mu\text{m}$  in diam, walls up to 1.5  $\mu\text{m}$  thick, internal veins similar but of less tightly interwoven tissue. **PARAPHYSES** absent. **ASCI** ellipsoid to subglobose, 70-85 x 55-70  $\mu\text{m}$ , thin-walled in youth but at maturity the walls up to 2  $\mu\text{m}$  thick, hyaline, sessile, inamyloid. **SPORES** ellipsoid, 1-4 per ascus, in 1-spored asci 39-45 x 29-35  $\mu\text{m}$  in diam excluding ornamentation, in 2-spored asci 36-43 x 28-32  $\mu\text{m}$ , in 3-spored asci 31-35 x 20-26  $\mu\text{m}$ , in 4-spored asci 23-35 x 16-26  $\mu\text{m}$ ; ornamentation an alveolate reticulum (2-) 3 (-4)  $\mu\text{m}$  tall, the alveolae with 5-6 sides and (4-) 6-10 along the spore length, spore walls 2-3 (-3.5)  $\mu\text{m}$  thick, brown.



**Distinguishing Features:** Differs from *Tuber rapaeodorum* Tul. & Tul. in lacking the erect, tapered, hyphal tips on peridial surface and the pseudoparenchymatous epicutis that characterize the latter. The peridium of *T. separans* Gilkey is minutely verrucose and regularly pseudoparenchymatous, in contrast to the smooth, largely prosenchymatous peridium of *T. pacificum*. The thick-walled asci of *T. pacificum* further distinguish it from the other two species.

**Distribution:** Endemic to Oregon. Known from two sites within the range of the northern spotted owl: **OREGON, Lane Co.**, Siuslaw National Forest, Cummins Creek Wilderness Area, Cummins Creek trail; **Polk Co.**, Van Duzer Corridor.

**Substrate and habitat:** Found in association with the roots of *Pseudotsuga menziesii* and *Tsuga heterophylla* at 700 ft. elevation.

**Season:** Fruits in February, June, and July.

**References:** TRAPPE, J.M., AND CASTELLANO, M.A. 199x. NATS truffle and truffle-like fungi. 9. Some new Ascomycota and Basidiomycota associated with the Northwest Forest Plan. Mycotaxon (in. press).

**NOTES:**

Photo courtesy of Dr. M.A. Castellano

## *Tylopilus porphyrosporus* (Fries) A.H. Smith & Thiers

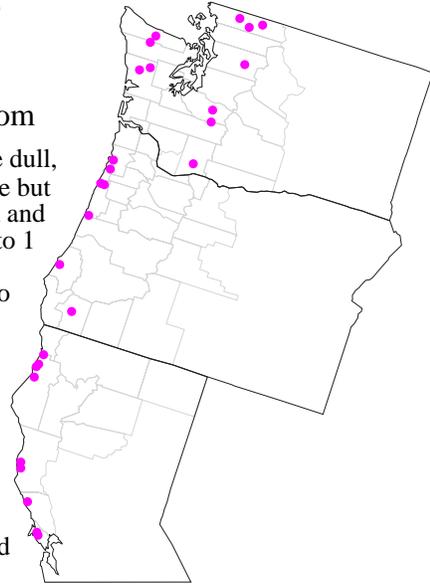
ROD name *Tylopilus pseudoscaber*

Family Boletaceae

Morphological Habit mushroom

**Description:** CAP 60-150 mm in diam, convex to broadly convex, surface dull, dry, velutinous to tomentose, smooth, very dark brown to black. **FLESH** white but staining blue then pink in spots. **TUBES** 15-20 mm long, dark brown to black and bruising blue. **TUBE MOUTHS** dark brown to black and bruising similarly, up to 1 mm in diam. **STEM** 130-200 x 15-20 mm, cylindric to clavate, dull, dry, glabrous, longitudinally ridged and often reticulate at the apex, dark brown to black with a white base. **ODOR** strong. **TASTE** mild. **PILEIPELLIS** a trichodermium. **BASIDIA** 4-spored. **CYSTIDIA** abundant, 35-50 x 12-15 µm, fusoid-ventricose to mucronate, red-brown in KOH. **CLAMP CONNECTIONS** absent. **SPORES** subfusoid to subcylindric, 13.8-17.6 x 6-9.6 µm, asymmetrical, smooth, deep red-brown spore print.

**Distinguishing Features:** Characterized by a dry, velutinous, black to very dark brown cap, dark brown to black tubes and tube mouths, a dark brown, longitudinally ridged, smooth to reticulate stem with a white base, and flesh that stains blue.



**Distribution:** Endemic to the Pacific Northwest. Known from twenty-six sites within the range of the northern spotted owl: **CALIFORNIA**, Humboldt Co., near McKinleyville; Prairie Creek State Park; Patricks Point State Park, Big Lagoon County Park; **Marin** Co., Point Reyes National Seashore, Inverness Ridge; Tomales State Park; **Mendocino** Co., Little River; Jackson State Forest; **Sonoma** Co., Salt Point State Park; **OREGON**, Coos Co., Coos County Forest, Beaver Hill; **Josephine** Co., Siskiyou National Forest, Big Pine campground; **Lane** Co., Neptune State Park; **Lincoln** Co., Van Duzer Corridor State Wayside; Siuslaw National Forest, Cape Perpetua; Siuslaw National Forest, Cascade Head Experimental Forest, Neskowin camp; Siuslaw National Forest, Cascade Head Experimental Forest, near headquarters; **Tillamook** Co., Cape Meares State Park; Cape Lookout State Park; **WASHINGTON**, **Clallam** Co., Olympic National Park, Solduc Valley, Lovers Lane; Olympic National Park, Solduc hot springs; **Grays Harbor** Co., Olympic National Park, Quinault Research Natural Area; **Pierce** Co., Mount Rainier National Park, entrance, Mount Rainier National Park, Green Lake; Mount Rainier National Park, lower Tahoma Creek; **Skamania** Co., Gifford Pinchot National Forest, Wind River valley, Government mineral springs; **Snohomish** Co., Mount Baker-Snoqualmie National Forest, Barlow Pass; **Whatcom** Co., North Cascades National Park, Chilliwack River, U.S. Cabin; Mount Baker-Snoqualmie National Forest, Boulder Creek trail.

**Substrate and habitat:** Solitary to scattered in soil, duff or on well-decomposed logs in association with the roots of *Picea sitchensis* and *Pseudotsuga menziesii* in coastal to mid-elevational forests.

**Season:** Fruits from August through December.

**References:** WOLFE, C. B., JR. 1979. *Austroboletus* and *Tylopilus* subgenus *Porphyrellus* with emphasis on North American Taxa. *Bibliotheca Mycologica* 69:1-148.

### NOTES:



Photo courtesy of Dr. G. Barron  
Photo courtesy of S. Trudell

Photo available only in print version